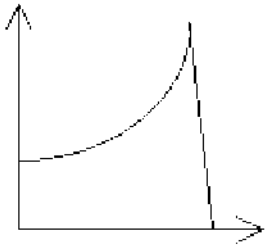
Name: _____ **Class:** _____ **Date:** _____ **ID: A**

Algebra I - Final Exam Review

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. Which graph is the most appropriate to describe a quantity decreasing at a steady rate?

a.


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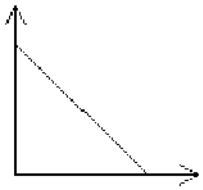

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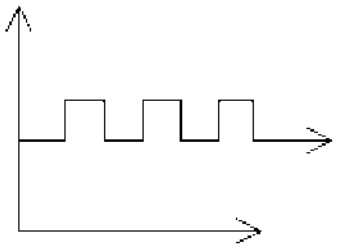

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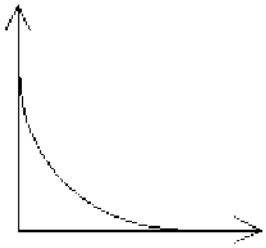
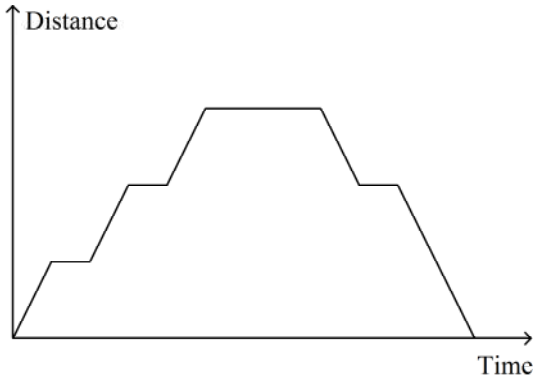


____ 2. Lena makes home deliveries of groceries for a supermarket. Her only stops after she leaves the supermarket are at traffic lights and the homes where she makes the deliveries. The graph shows her distance from the store on her first trip for the day. What is the greatest possible number of stops she made at traffic lights?



a. 3 b. 4 c. 9 d. 5

____ 3. A plane that carries mail makes a round trip each day from Chicago to New York. It makes 3 intermediate stops on the way to New York and 1 intermediate stop on the way back to Chicago. Suppose you make a graph of the altitude of the plane for one day, with time on the horizontal axis and altitude on the vertical axis. How many times will the graph touch the horizontal axis?

a. 11 b. 6 c. 7 d. 4

____ 4. Evaluate $f(x) = \frac{1}{3}x$ for $x = 4$.

a. $1\frac{1}{3}$ b. $\frac{1}{12}$ c. $\frac{3}{4}$ d. -12

____ 5. Evaluate $f(x) = -x^2 + 1$ for $x = -3$.

a. -9 b. -4 c. -8 d. 4

____ 6. A taxi company charges passengers \$2.00 for a ride, no matter how long the ride is, and an additional \$0.20 for each mile traveled. The rule $c = 0.20m + 2.00$ describes the relationship between the number of miles m and the total cost of the ride c.

a. What is the charge for a 1-mile ride?

b. What is the charge for a 2.7-mile ride?

a. \$2.20; \$2.54 b. \$2.00; \$2.20 c. \$0.20; \$5.60 d. \$0.20; \$0.54

Write a function rule for the table.

____ 7.

x	$f(x)$
2	–8
3	–12
4	–16
5	–20

a. $f(x) = -4x$ b. $f(x) = 4x$ c. $f(x) = x - 4$ d. $f(x) = x + 4$

____ 8.

x	$f(x)$
3	7
4	8
5	9
6	10

a. $f(x) = x - 4$ b. $f(x) = 4x$ c. $f(x) = x + 4$ d. $f(x) = -4 - x$

____ 9. A zucchini plant in Darnell's garden was 10 centimeters tall when it was first planted. Since then, it has grown approximately 0.5 centimeters per day.

a. Write a rule to describe the function.

b. After how many days will the zucchini plant be 0.185 meters tall?

a. $h(d) = 0.5d + 10$; 17 days c. $h(d) = \frac{d}{0.5} + 10$; 4 days

b. $h(d) = 10d + 0.5$; 1.1 days d. $h(d) = 0.5d$; 37 days

Determine whether the function rule models discrete or continuous data.

____ 10. A movie store sells DVDs for \$15 each. The function $C(d) = 15d$ relates the total cost of movies to the number purchased d.

a. discrete b. continuous

The rate of change is constant in each table. Find the rate of change. Explain what the rate of change means for the situation.

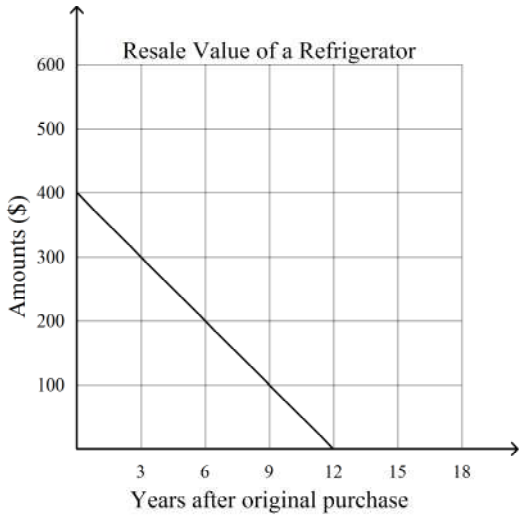
____ 11.

Time (hours)	Distance (miles)
4	260
6	390
8	520
10	650

a. 10; Your car travels for 10 hours.
b. 260; Your car travels 260 miles.
c. $\frac{65}{1}$; Your car travels 65 miles every 1 hour.
d. $\frac{1}{65}$; Your car travels 65 miles every 1 hour.

The rate of change is constant in the graph. Find the rate of change. Explain what the rate of change means for the situation.

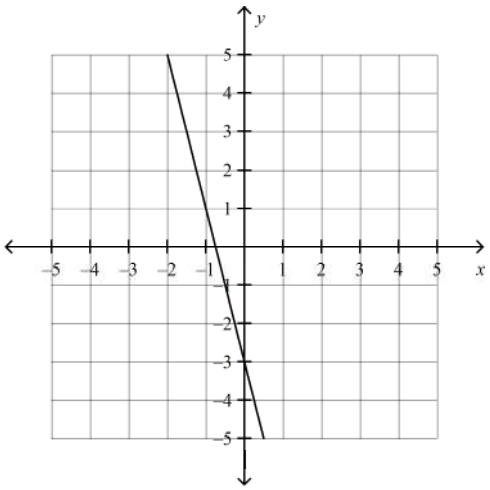
____ 12.



a. –100; value drops $100 every year.
b. $-\frac{100}{3}$; value drops $100 every 3 years.
c. –3; value drops $3 every year.
d. –1; value drops $1 every year.

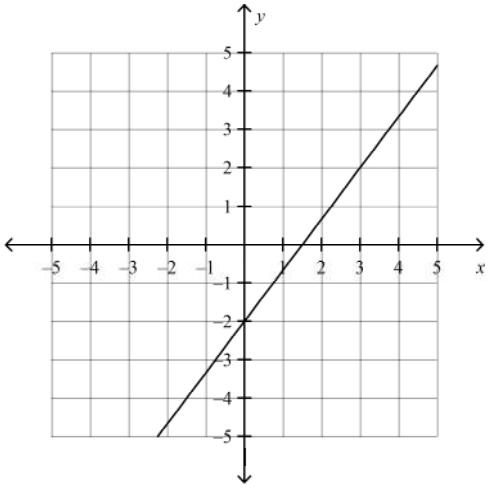
Find the slope of the line.

____ 13.



a. $-\frac{1}{4}$ b. 4 c. $\frac{1}{4}$ d. –4

____ 14.



a. $\frac{3}{4}$ b. $\frac{4}{3}$ c. $-\frac{3}{4}$ d. $-\frac{4}{3}$

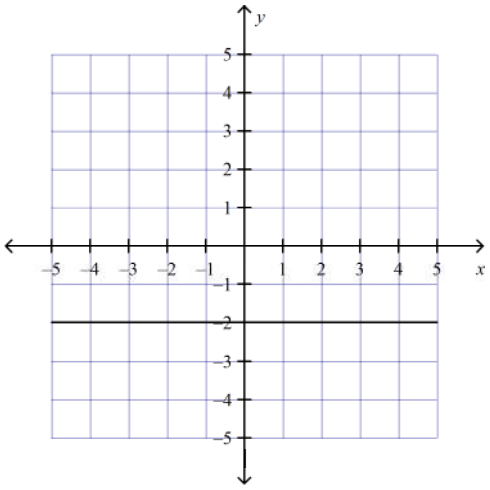
Find the slope of the line that passes through the pair of points.

____ 15. (1, 7), (10, 1)

a. $\frac{3}{2}$ b. $-\frac{2}{3}$ c. $-\frac{3}{2}$ d. $\frac{2}{3}$

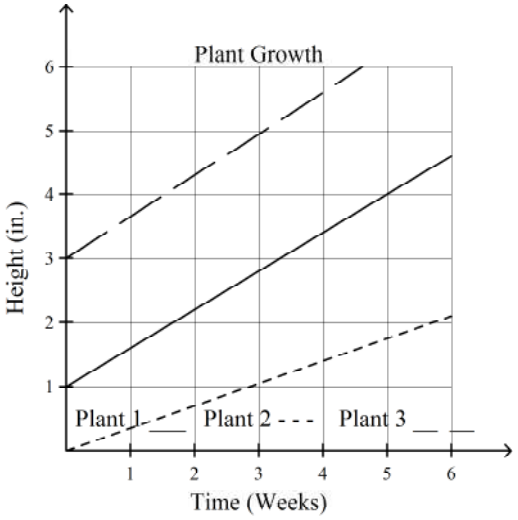
State whether the slope is 0 or undefined.

____ 16.



a. undefined
b. 0

____ 17.



Use the graph.
a. Which plant was the tallest at the beginning?
b. Which plant had the greatest rate of change over the 6 weeks?

a. plant 2; plant 2
b. plant 1; plant 3
c. plant 3; plant 1
d. plant 3; plant 3

Find the slope and *y*-intercept of the line.

____ 18. $18x + 9y = -54$

a. $-2; -\frac{1}{6}$
b. $-2; -6$
c. $-\frac{1}{2}; -6$
d. $2; 6$

Write an equation of a line with the given slope and *y*-intercept.

____ 19. $m = \frac{1}{4}, b = -\frac{3}{4}$

a. $y = 4x - \frac{3}{4}$

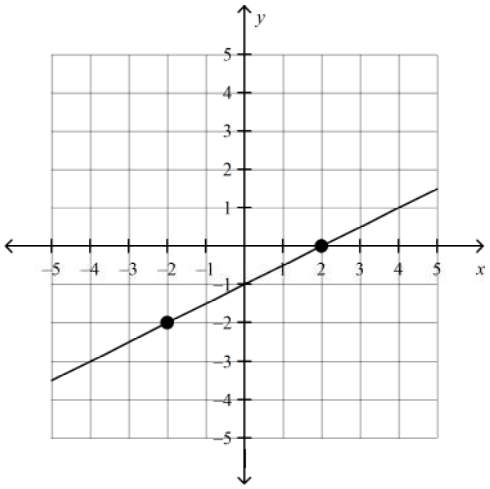
b. $y = \frac{1}{4}x - \frac{3}{4}$

c. $y = -\frac{3}{4}x + \frac{1}{4}$

d. $y = \frac{1}{4}x + \frac{3}{4}$

Write the slope-intercept form of the equation for the line.

____ 20.



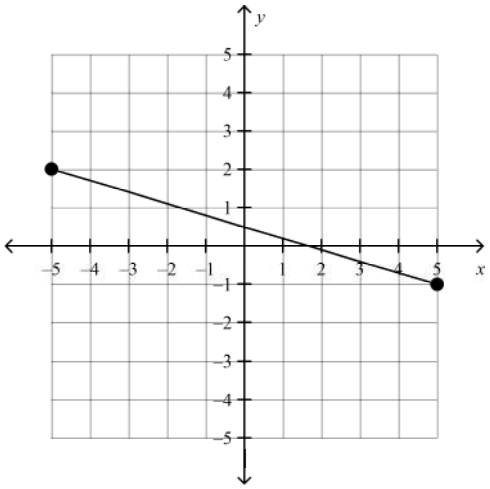
a. $y = -\frac{1}{2}x - 1$

b. $y = 2x - 1$

c. $y = \frac{1}{2}x - 1$

d. $y = 2x + 1$

____ 21.



a. $y = -\frac{10}{3}x + \frac{1}{2}$

b. $y = \frac{3}{10}x + \frac{1}{2}$

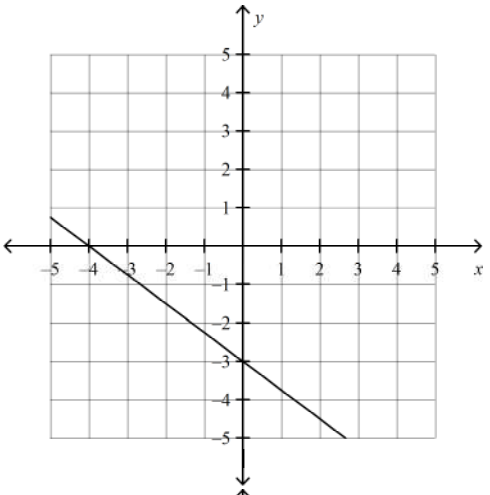
c. $y = -\frac{3}{10}x + \frac{1}{2}$

d. $y = \frac{1}{2}x + \frac{3}{10}$

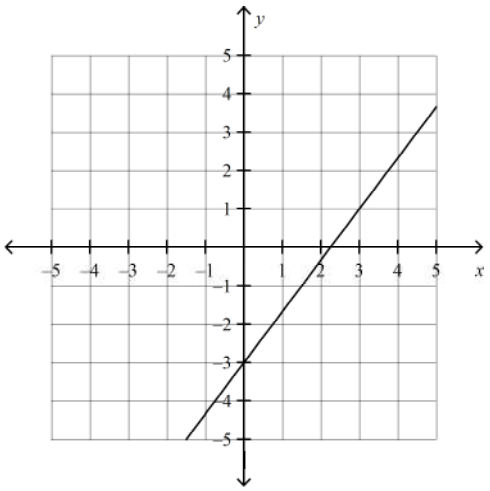
____ 22. Use the slope and *y*-intercept to graph the equation.

$y = \frac{3}{4}x - 3$

a.



c.



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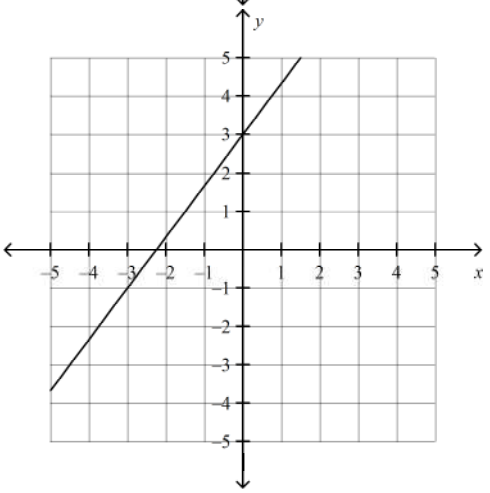
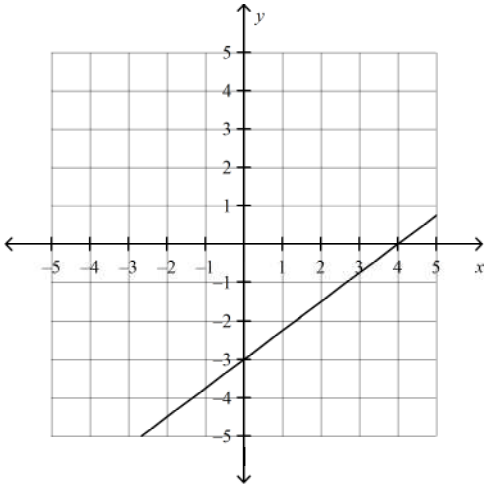


d.



Find the *x*- and *y*-intercept of the line.

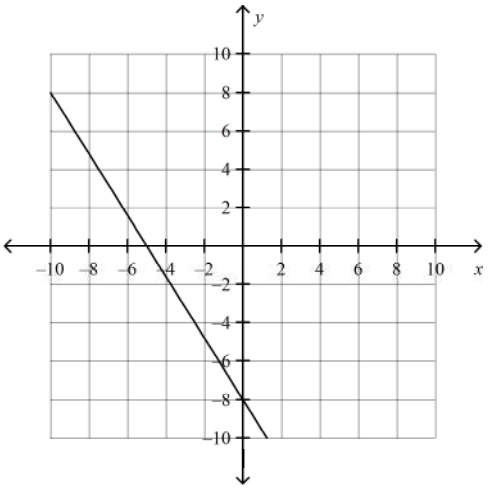
____ 23. $-3x + 9y = 18$

a. *x*-intercept is 2; *y*-intercept is –6.
b. *x*-intercept is –3; *y*-intercept is 9.
c. *x*-intercept is –6; *y*-intercept is 2.
d. *x*-intercept is 9; *y*-intercept is –3.

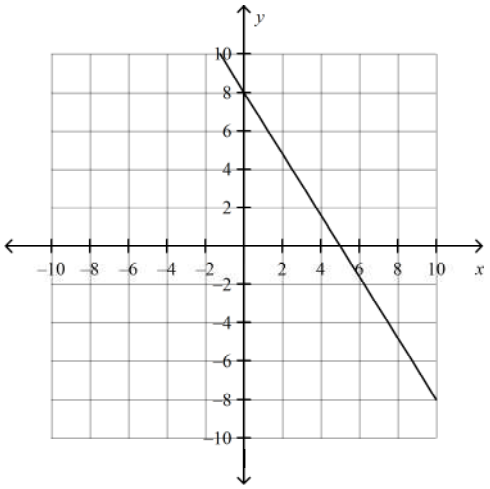
Match the equation with its graph.

____ 24. $-8x + 5y = -40$

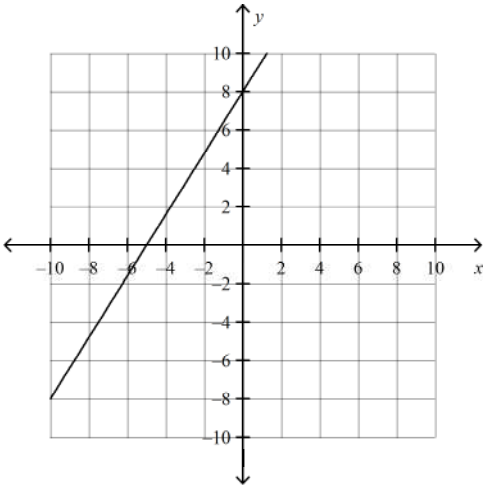
a.



c.



b.



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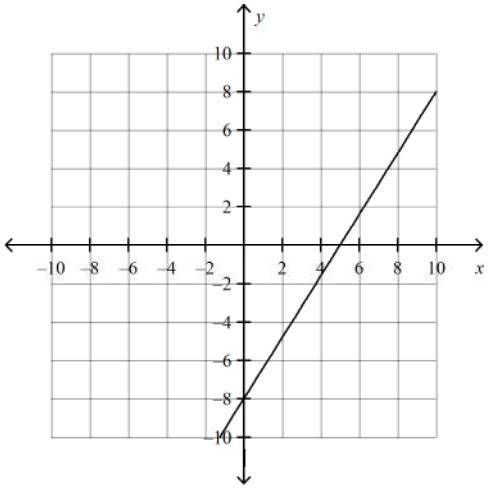


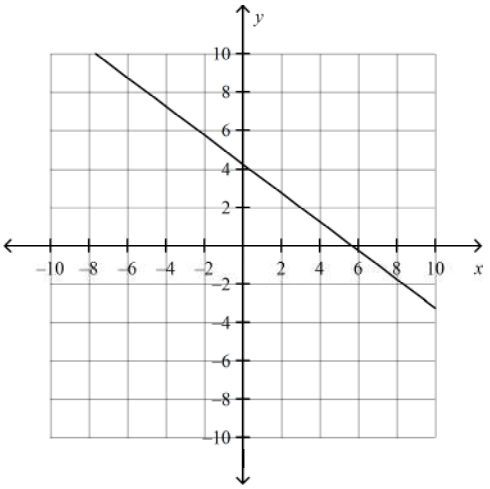
____ 25. The grocery store sells kumquats for $4.25 a pound and Asian pears for $2.25 a pound. Write an equation in standard form for the weights of kumquats k and Asian pears p that a customer could buy with $18.

a. $4.25k + 2.25p = 18$
b. $4.25p + 2.25k = 18$
c. $4.25k = 2.25p + 18$
d. $4.25 + 2.25 = k$

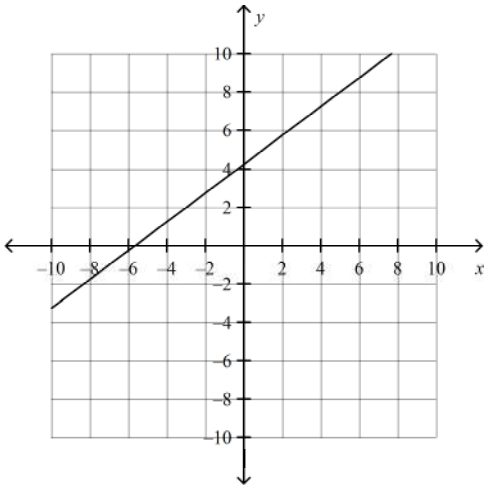
Graph the equation.

____ 26. $y - 5 = -\frac{3}{4}(x + 1)$

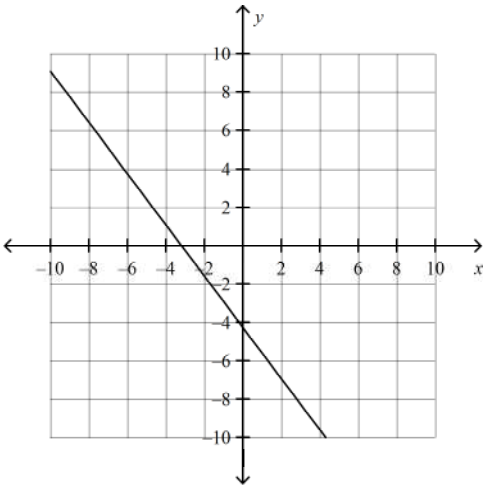
a.



c.



b.



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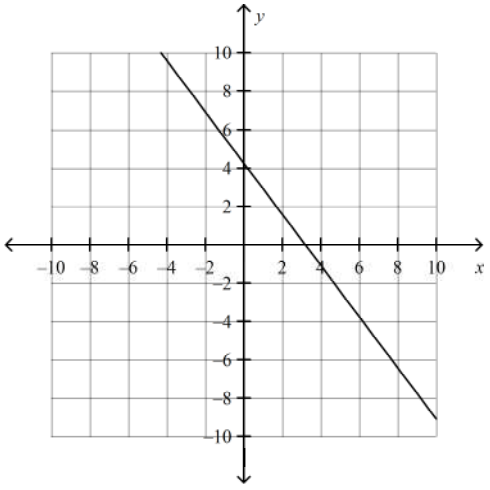


____ 27. A line passes through (2, –1) and (8, 4).
a. Write an equation for the line in point-slope form.
b. Rewrite the equation in standard form using integers.

a. $y + 1 = \frac{5}{6}(x - 2)$; $-5x + 6y = -16$

c. $y + 1 = \frac{5}{6}(x + 2)$; $-5x + 6y = -16$

b. $y - 1 = \frac{5}{6}(x - 2)$; $-5x + 6y = 16$

d. $y - 2 = \frac{5}{6}(x + 1)$; $-5x + 6y = 17$

____ 28. In February, you have a balance of $270 in your bank account. Each month you deposit $45. Let January = 1, February = 2, and so on. Write an equation for this situation. Use the equation to find the balance in June.

a. $y - 270 = 45(x - 2)$; $450

c. $y = 45(x - 4)$; $180

b. $y = 45(x - 4)$; $270

d. $y - 270 = 45x$; $45

Are the graphs of the lines in the pair parallel? Explain.

____ 29. $y = \frac{1}{6}x + 8$
$-2x + 12y = -11$
a. Yes, since the slope are the same and the y-intercepts are the same.
b. No, since the y-intercepts are different.
c. Yes, since the slope are the same and the y-intercepts are different.
d. No, since the slopes are different.

____ 30. $y = 5x + 6$
$-18x + 3y = -54$
a. No, since the slopes are different.
b. Yes, since the slopes are the same and the y-intercepts are different.
c. No, since the y-intercepts are different.
d. Yes, since the slope are the same and the y-intercepts are the same.

____ 31. Find a solution to the following system of equations.
$-5x + y = -5$
$-4x + 2y = 2$
a. $(-8, -15)$ b. $(-2, -15)$ c. $(0, 1)$ d. $(2, 5)$

____ 32. What is the solution of the system of equations?
$y = 3x + 7$
$y = x - 9$
a. $(-1, -10)$ b. $(-17, -8)$ c. $(4, 19)$ d. $(-8, -17)$

____ 33. Find the value of b that makes the system of equations have the solution $(3, 5)$.
$y = 3x - 4$
$y = bx + 2$
a. 0 b. –1 c. 2 d. 1

Solve the system of equations using substitution.

____ 34. $3x + 2y = 7$
$y = -3x + 11$
a. $(6, -3)$ b. $(6, -7)$ c. $\left(-4, \frac{19}{2}\right)$ d. $(5, -4)$

____ 35. Sharon has some one-dollar bills and some five-dollar bills. She has 14 bills. The value of the bills is $30. Solve a system of equations using elimination to find how many of each kind of bill she has.
a. 4 five-dollar bills, 10 one-dollar bills
b. 3 five-dollar bills, 10 one-dollar bills
c. 5 five-dollar bills, 5 one-dollar bills
d. 5 five-dollar bills, 9 one-dollar bills

Solve the system using elimination.

____ 36. $x + 2y = -6$
$3x + 8y = -20$
a. $(-1, -4)$ b. $(-4, 4)$ c. $(-4, -1)$ d. $(3, 1)$

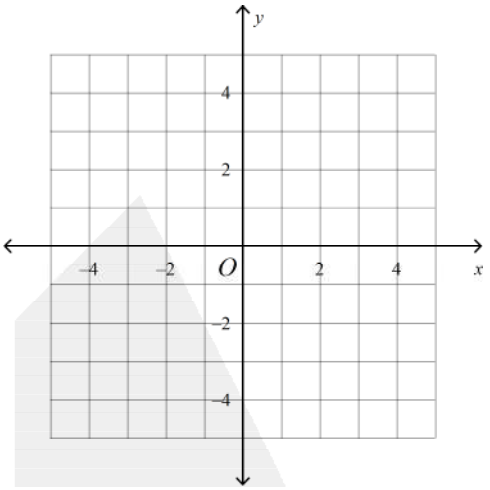
____ 37. A jar containing only nickels and dimes contains a total of 60 coins. The value of all the coins in the jar is $4.45. Solve by elimination to find the amount of nickels and dimes that are in the jar.

a. 30 nickels and 28 dimes
b. 31 nickels and 29 dimes
c. 29 nickels and 31 dimes
d. 30 nickels and 32 dimes

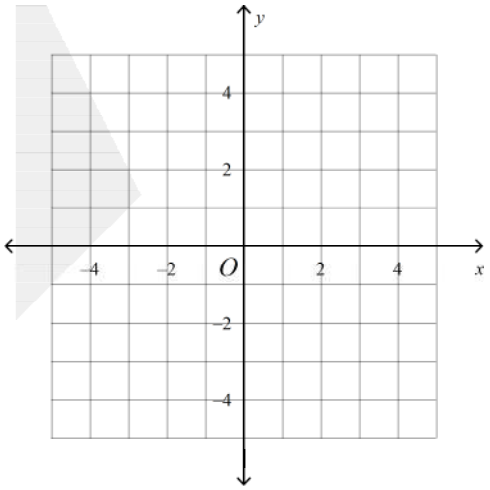
Solve the system of linear inequalities by graphing.

____ 38. $y \leq x + 4$
$2x + y \leq -4$

a.



c.



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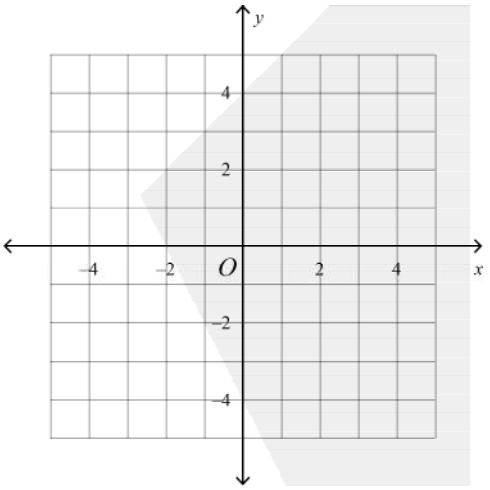

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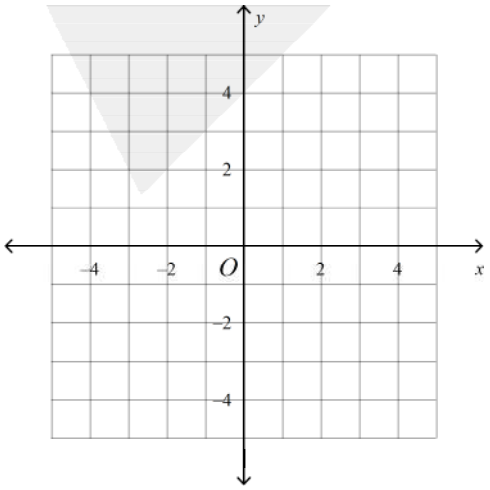
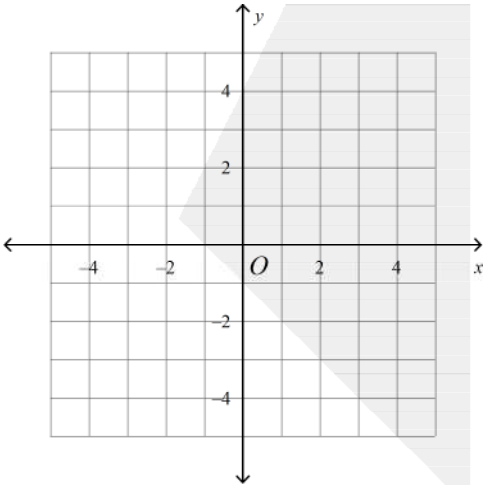
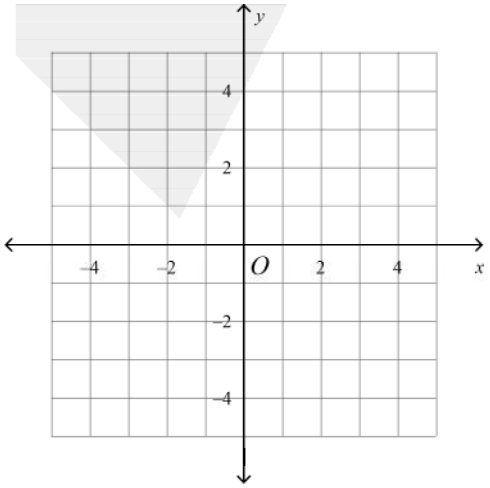


____ 39. $y \leq -x - 1$
$y \geq 2x + 4$

a.



c.



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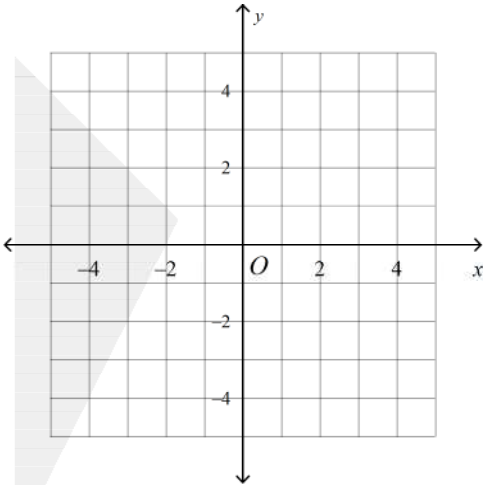
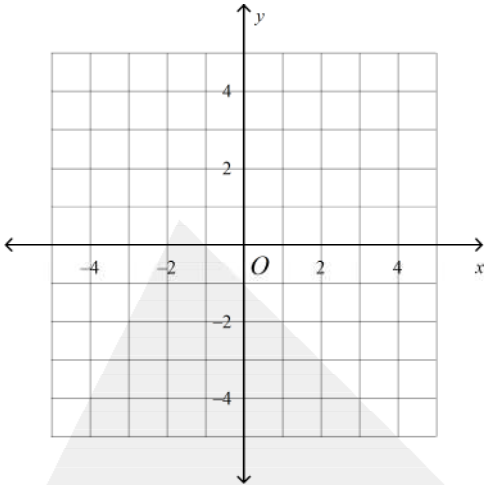
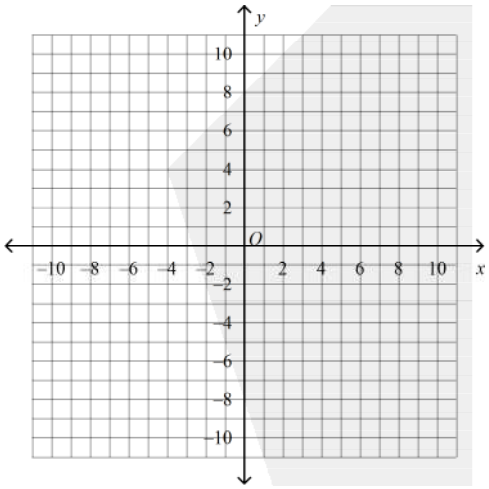


d.



Write a system of inequalities for the graph.

____ 40.



a. $y \geq x + 8$
$8x + y \geq -8$

b. $y \leq x + 3$
$8x + y \leq -8$

c. $y \geq x + 8$
$3x + y \leq -8$

d. $y \leq x + 8$
$3x + y \leq -8$

Simplify the expression.

____ 41. $(-8.6)^0$

a. -1 b. 0 c. -8.6 d. 1

____ 42. $-(6)^{-1}$

a. 6 b. $-\frac{1}{-1^6}$ c. $\frac{1}{6}$ d. $-\frac{1}{6}$

____ 43. $(4)^{-2}$

a. $-\frac{1}{16}$ b. 16 c. $\frac{1}{16}$ d. -8

____ 44. $7a^{-5}b^3$

a. $7ab^{-15}$ b. $\frac{b^3}{7a^5}$ c. $\frac{7b^3}{a^5}$ d. $7a^5b^{-3}$

____ 45. $\frac{12}{c^{-8}d^2}$

a. $\frac{12}{cd^{-6}}$ b. $\frac{96c}{d^2}$ c. $\frac{12}{c^8d^2}$ d. $\frac{12c^8}{d^2}$

____ 46. $2k^8 \cdot 3k^3$

a. $5k^{24}$ b. $5k^{11}$ c. $6k^{11}$ d. $6k^{24}$

____ 47. $7x^{-8} \cdot 6x^3$

a. $\frac{42}{x^5}$ b. $\frac{1}{42x^5}$ c. $42x^{11}$ d. $13x^{-5}$

____ 48. $a^5 \cdot 3b^9 \cdot 6a$

a. $18a^6b^9$ b. $10a^6b^9$ c. $18ab^{15}$ d. $18a^{45}b^9$

____ 49. $-4x^3 \cdot 2y^{-2} \cdot 5y^5 \cdot x^{-8}$

a. $-\dfrac{x^2}{40y^3}$ b. $-\dfrac{40y^3}{x^5}$ c. $-\dfrac{2x^5}{5y^3}$ d. $-\dfrac{5y^3}{2x}$

____ 50. $(k^2)^4$

a. k^6 b. $2k^8$ c. k^{16} d. k^8

____ 51. $(5k^2)^3$

a. $125k^6$ b. $125k^5$ c. $5k^6$ d. $5k^8$

____ 52. $(3xy^3)^2(xy)^6$

a. $9x^8y^{12}$ b. $3x^8y^{12}$ c. $2x^3y^{12}$ d. $9x^8y^9$

____ 53. $(-5g^5h^6)^2(g^4h^2)^4$

a. $25g^{26}h^{20}$ b. $\dfrac{g^{26}h^{20}}{25}$ c. $-25g^{26}h^{20}$ d. $25g^{15}h^{14}$

____ 54. $\dfrac{x^{14}}{x^7}$

a. x^7 b. x^{98} c. $\dfrac{1}{x^7}$ d. x^{21}

____ 55. $\dfrac{x^5}{x^9}$

a. $\dfrac{1}{x^{14}}$ b. x^4 c. x^{14} d. $\dfrac{1}{x^4}$

____ 56. $\dfrac{9^7}{9^9}$

a. $\dfrac{1}{81}$ b. 9^{16} c. $\dfrac{1}{9^{16}}$ d. 81

____ 57. $\dfrac{m^{-6}n^{-3}}{m^{-13}n^{-1}}$

a. $\dfrac{n^{-9}}{n^{-14}}$ b. m^3n^{12} c. $\dfrac{m^7}{n^2}$ d. m^7n^2

____ 58. $\left(\dfrac{3x}{2}\right)^4$

a. $\dfrac{81x^4}{16}$ b. $6x^4$ c. $\dfrac{12x^4}{8}$ d. $\dfrac{81x^4}{2}$

____ 59. $\left(\dfrac{m^{-1}m^5}{m^{-2}}\right)^{-3}$

a. $-\dfrac{3m^4}{m^{-2}}$ b. $\dfrac{1}{m^{18}}$ c. m^{18} d. $-m^{216}$

____ 60. $4\sqrt{7} + 8\sqrt{63}$

a. $76\sqrt{7}$ b. $12\sqrt{63}$ c. $28\sqrt{7}$ d. $28\sqrt{63}$

____ 61. $(6 - \sqrt{11})(6 + \sqrt{11})$

a. $36 + \sqrt{11}$ c. -85

b. $47 + 12\sqrt{11}$ d. 25

____ 62. $\sqrt{39}\left(\sqrt{6} + 7\right)$

a. $\sqrt{45} + 7\sqrt{39}$ c. $\sqrt{234} + 7$

b. $3\sqrt{26} + 7\sqrt{39}$ d. $\sqrt{234} + 7\sqrt{39}$

____ 63. $\dfrac{8}{\sqrt{6} - \sqrt{3}}$

a. $\dfrac{8\sqrt{6} - 8\sqrt{3}}{3}$ c. $\dfrac{8\sqrt{6} + 8\sqrt{3}}{\sqrt{27}}$

b. $\dfrac{8\left(\sqrt{6} + \sqrt{3}\right)}{9}$ d. $\dfrac{8\sqrt{6} + 8\sqrt{3}}{3}$

____ 64. $\dfrac{\sqrt{2} + \sqrt{6}}{\sqrt{8} + \sqrt{6}}$

a. $\dfrac{\sqrt{12} + 6 - \sqrt{16} - \sqrt{48}}{-2}$ c. $\dfrac{\sqrt{8}}{\sqrt{14}}$

b. $\sqrt{3} - 1$ d. $\dfrac{1}{\sqrt{4}} + 1$

____ 65. Evaluate $9x^2y^{-2}$ for $x = -3$ and $y = 2$.

a. 324 b. $20\frac{1}{4}$ c. $9(-6)^0$ d. $\frac{1}{144}$

____ 66. Write the polynomial in standard form. Then name the polynomial based on its degree and number of terms.

$2 - 11x^2 - 8x + 6x^2$

a. $-5x^2 - 8x + 2$; quadratic trinomial c. $-6x^2 - 8x - 2$; cubic polynomial

b. $5x^2 - 8x - 2$; quadratic trinomial d. $6x^2 - 8x + 2$; cubic trinomial

Simplify the difference.

____ 67. $(-7x - 5x^4 + 5) - (-7x^4 - 5 - 9x)$

a. $2x^4 + 2x + 8$ c. $-14x^4 - 10x + 10$

b. $-14x^4 + 10x + 10$ d. $2x^4 + 2x + 10$

____ 68. Simplify the sum.

$(4u^3 + 4u^2 + 2) + (6u^3 - 2u + 8)$

a. $10 - 2u + 4u^2 + 10\,u^3$ c. $-2u^3 + 4u^2 - 2u + 10$

b. $-2u^3 - 2u^2 + 4u - 10$ d. $10u^3 + 4u^2 - 2u + 10$

Simplify the product.

____ 69. $3p^4(4p^4 + 7p^3 + 4p + 1)$

a. $12p^8 + 3p^7 + 4p^5 + p^4$
b. $12p^8 + 21p^7 + 12p^5 + 3p^4$
c. $7p^8 + 10p^7 + 7p^5 + 4p^4$
d. $12p^{16} + 21p^{12} + 15p^4$

Factor the polynomial.

____ 70. $54c^3d^4 + 9c^4d^2$

a. $9c^3d^2(d^2 + 6c)$
b. $9c^3d^2(6d^2 + c)$
c. $9c^4d^2(d^2 + 6)$
d. $9c^4d^2(6d^2 + 1)$

Simplify the product using FOIL.

____ 71. $(3x - 7)(3x - 5)$

a. $9x^2 + 6x + 35$
b. $9x^2 + 36x + 35$
c. $9x^2 - 36x - 35$
d. $9x^2 - 36x + 35$

____ 72. $(4x + 3)(2x + 5)$

a. $8x^2 + 14x - 15$
b. $8x^2 - 14x - 15$
c. $8x^2 + 26x + 15$
d. $8x^2 - 26x + 15$

____ 73. Simplify using the horizontal method.

$(2n^2 + 4n + 4)(4n - 5)$

a. $8n^3 + 26n^2 - 36n - 20$
b. $8n^3 + 6n^2 - 4n - 20$
c. $8n^3 + 4n^2 - 6n - 20$
d. $8n^3 - 6n^2 + 36n - 20$

Find the square.

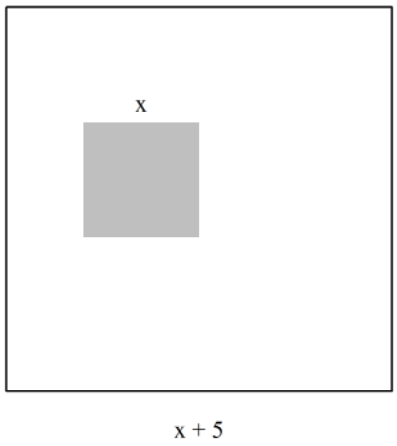
____ 74. $(2x - 6)^2$

a. $4x^2 - 24x + 36$
b. $4x^2 - 8x + 36$
c. $4x^2 + 36$
d. $4x^2 - 12x + 36$

____ 75. $(8m + 7)^2$

a. $64m^2 + 112m - 49$
b. $64m^2 + 112m + 49$
c. $64m^2 + 56m - 49$
d. $64m^2 - 112m + 49$

____ 76. Find the area of the UNSHADED region. Write your answer in standard form.



a. $-2x^2 + 10x + 25$
b. $x^2 + 8x + 25$
c. $10x + 25$
d. $x^2 + 10x + 25$

Find the product.

____ 77. $(4p - 6)(4p + 6)$
a. $16p^2 - 36$
b. $16p^2 - 48p - 36$
c. $16p^2 + 48p + 36$
d. $16p^2 + 36$

Factor the expression.

____ 78. $w^2 + 18w + 77$
a. $(w - 7)(w + 11)$
b. $(w - 7)(w - 11)$
c. $(w + 7)(w + 11)$
d. $(w + 1)(w + 77)$

____ 79. $d^2 + 10d + 9$
a. $(d + 9)(d - 1)$
b. $(d - 9)(d + 1)$
c. $(d - 9)(d - 1)$
d. $(d + 9)(d + 1)$

____ 80. $12d^2 + 4d - 1$
a. $(6d + 1)(2d + 1)$
b. $(6d - 1)(2d - 1)$
c. $(6d - 1)(2d + 1)$
d. $(6d + 1)(2d - 1)$

____ 81. $20x^2 + 22x - 12$
a. $2(5x - 2)(2x + 3)$
b. $2(5x + 2)(2x - 3)$
c. $(10x - 2)(4x + 3)$
d. $2(5x + 4)(2x - 3)$

____ 82. $d^2 - 14d + 49$
a. $(d + 7)^2$
b. $(d - 7)^2$
c. $(d - 7)(d + 7)$
d. $(d - 49)(d - 1)$

____ 83. $49b^2 + 70b + 25$
a. $(-7b + 5)^2$
b. $(7b + 5)^2$
c. $(7b - 5)^2$
d. $(-7b - 5)^2$

____ 84. $r^2 - 49$

a. $(r - 7)(r + 7)$
b. $(r + 7)(r + 7)$
c. $(r - 7)(r - 7)$
d. $(r - 7)(r + 9)$

____ 85. $4x^2 - 81y^2$

a. $(2x + 9)(2x - 9)$
b. $(2x + 9y)(2x - 9y)$
c. $(2x + 9y)^2$
d. $(2x - 9y)^2$

Simplify the radical expression.

____ 86. $-4\sqrt{160}$

a. $-4\sqrt{80}$
b. $-4\sqrt{16}$
c. $-16\sqrt{10}$
d. $\sqrt{10}$

____ 87. $-3\sqrt{180h^4}$

a. $6\sqrt{5h^4}$
b. $-18\sqrt{5h^4}$
c. $-18h^2\sqrt{5}$
d. $-3h\sqrt{90}$

____ 88. $-2\sqrt{2p} \cdot 2\sqrt{22}$

factor 1: 1
factpr 2: 11
common factor: 2

a. $\sqrt{44p}$
b. $-8\sqrt{11p}$
c. $-4\sqrt{44p}$
d. $-8\sqrt{11p^2}$

____ 89. $\sqrt{\dfrac{10}{81}}$

a. $\dfrac{10}{9}$
b. $\dfrac{\sqrt{10}}{41}$
c. $9\sqrt{10}$
d. $\dfrac{\sqrt{10}}{9}$

____ 90. $\sqrt{\dfrac{80w^3}{9}}$

a. $\dfrac{w\sqrt{80w}}{3}$
b. $\dfrac{4w\sqrt{5w}}{3}$
c. $\dfrac{\sqrt{80w^3}}{3}$
d. $3\sqrt{w^3}$

____ 91. $\sqrt{\dfrac{400}{5}}$

a. $4\sqrt{5}$
b. $\dfrac{16\sqrt{5}}{5}$
c. 160
d. $\dfrac{16\sqrt{5}}{\sqrt{5}}$

____ 92. $\sqrt{\dfrac{63x^{15}y^9}{7xy^{11}}}$

a. $\dfrac{8x^7y^4\sqrt{xy}}{\sqrt{7xy^{11}}}$
b. $\dfrac{3x^7}{y}$
c. $\dfrac{9x^7}{y}$
d. $9x^7y$

Simplify the radical expression by rationalizing the denominator.

____ 93. $\frac{4}{\sqrt{21}}$

a. $\frac{4\sqrt{21}}{21}$ b. $4\sqrt{21}$ c. $21\sqrt{4}$ d. $\frac{\sqrt{441}}{21}$

____ 94. $\frac{7\sqrt{100}}{\sqrt{500}}$

a. $\frac{7}{\sqrt{400}}$ b. $\frac{7\sqrt{5}}{5}$ c. $\frac{7\sqrt{500}}{250}$ d. $\frac{7\sqrt{500}}{500}$

Simplify the rational expression.

____ 95. $\frac{4x - 8}{4x + 20}$

a. $\frac{x - 2}{x + 5}$ b. $\frac{x - 2}{4x + 20}$

____ 96. $\frac{-4x^3}{x^3 - 2x^4}$

a. $\frac{-4}{1 - 2x}$ b. $\frac{-4x}{1 - 2x}$

____ 97. $\frac{x^2 + 4x - 5}{1 - x}$

a. $-x - 5$ b. $\frac{-x + 5}{1 - x}$

____ 98. $\frac{x^2 - 2x - 24}{x^2 - 5x - 36}$

a. $\frac{x + 6}{x + 9}$ b. $\frac{x - 6}{x - 9}$

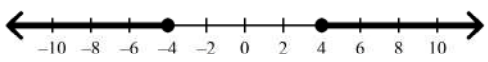
____ 99. $\frac{x^2 + 4x - 21}{x^2 + x - 42}$

a. $\frac{x + 7}{x + 6}$ b. $\frac{x - 3}{x - 6}$

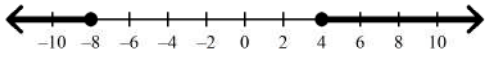
Solve the inequality. Then graph your solution.

____ 100. $|d + 2| \geq 6$

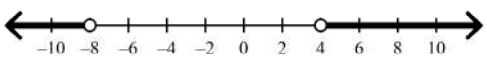
a. $d \leq -4$ or $d \geq 4$



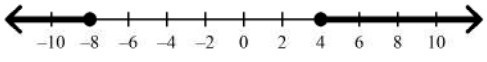
b. $d \geq -8$ or $d \geq 4$



c. $d \leq -8$ or $d \geq 4$



d. $d \leq -8$ or $d \geq 4$

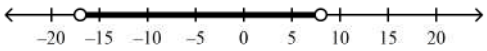


____ 101. $|2x + 9| < 25$

a. $-36 < x < 14$

b. $-17 < x < 8$

c. $-17 > x > 8$

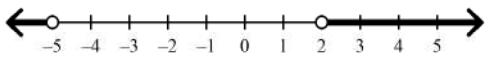


d. $-8 < x < 8$

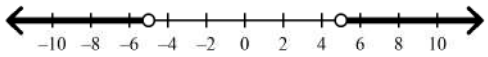
Solve the compound inequality. Graph your solution.

____ 102. $2x - 2 < -12$ or $2x + 3 > 7$

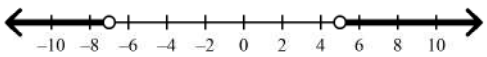
a. $x < -5$ or $x > 2$



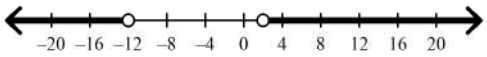
b. $x < -5$ or $x > 5$



c. $x < -7$ or $x > 5$



d. $x < -12$ or $x > 2$



Solve the equation. If there is no solution, write *no solution*.

____ 103. $|x| - 7 = 6$

a. $x = 13$

b. $x = 13$ or $x = -13$

c. $x = -1$

d. no solution

____ 104. $2|n| - 12 = 16$

a. $n = 14$ or $n = -14$

b. $n = 26$ or $n = -30$

c. no solution

d. $n = 14$

Algebra I - Final Exam Review
Answer Section

MULTIPLE CHOICE

1. ANS: C PTS: 1 DIF: L2 REF: 5-1 Relating Graphs to Events
   OBJ: 5-1.1 Interpreting, Sketching, and Analyzing Graphs
   NAT: NAEP 2005 A2a | NAEP 2005 A2c | ADP J.4.8 STA: PA M11.D.3.1 | PA M11.D.3.1.1
   TOP: 5-1 Example 3 KEY: graphing | analyze a graph
2. ANS: A PTS: 1 DIF: L3 REF: 5-1 Relating Graphs to Events
   OBJ: 5-1.1 Interpreting, Sketching, and Analyzing Graphs
   NAT: NAEP 2005 A2a | NAEP 2005 A2c | ADP J.4.8 STA: PA M11.D.3.1 | PA M11.D.3.1.1
   TOP: 5-1 Example 1 KEY: graphing | interpret a graph | reasoning
3. ANS: C PTS: 1 DIF: L3 REF: 5-1 Relating Graphs to Events
   OBJ: 5-1.1 Interpreting, Sketching, and Analyzing Graphs
   NAT: NAEP 2005 A2a | NAEP 2005 A2c | ADP J.4.8 STA: PA M11.D.3.1 | PA M11.D.3.1.1
   TOP: 5-1 Example 2
   KEY: graphing | sketch a graph | problem solving | word problem
4. ANS: A PTS: 1 DIF: L2 REF: 5-2 Relations and Functions
   OBJ: 5-2.2 Evaluating Functions NAT: NAEP 2005 A1g | ADP J.2.1 | ADP J.2.3
   STA: PA M11.D.1.1 | PA M11.D.1.1.2 TOP: 5-2 Example 4
   KEY: function
5. ANS: C PTS: 1 DIF: L2 REF: 5-2 Relations and Functions
   OBJ: 5-2.2 Evaluating Functions NAT: NAEP 2005 A1g | ADP J.2.1 | ADP J.2.3
   STA: PA M11.D.1.1 | PA M11.D.1.1.2 TOP: 5-2 Example 4
   KEY: function |
6. ANS: A PTS: 1 DIF: L3 REF: 5-2 Relations and Functions
   OBJ: 5-2.2 Evaluating Functions NAT: NAEP 2005 A1g | ADP J.2.1 | ADP J.2.3
   STA: PA M11.D.1.1 | PA M11.D.1.1.2 KEY: function | multi-part question
7. ANS: A PTS: 1 DIF: L2 REF: 5-4 Writing a Function Rule
   OBJ: 5-4.1 Writing Function Rules NAT: NAEP 2005 A1e | NAEP 2005 A3a
   STA: PA M11.D.1.1.1 TOP: 5-4 Example 1
   KEY: rule | function
8. ANS: C PTS: 1 DIF: L2 REF: 5-4 Writing a Function Rule
   OBJ: 5-4.1 Writing Function Rules NAT: NAEP 2005 A1e | NAEP 2005 A3a
   STA: PA M11.D.1.1.1 TOP: 5-4 Example 1
   KEY: rule | function
9. ANS: A PTS: 1 DIF: L4 REF: 5-4 Writing a Function Rule
   OBJ: 5-4.1 Writing Function Rules NAT: NAEP 2005 A1e | NAEP 2005 A3a
   STA: PA M11.D.1.1.1
   KEY: function | multi-part question | word problem | problem solving
10. ANS: A PTS: 1 DIF: L2
    REF: 5-3 Function Rules, Tables, and Graphs OBJ: 5-3.1 Modeling Functions
    NAT: NAEP 2005 A1e | NAEP 2005 A2a | ADP J.2.3 | ADP L.1.1
    STA: PA M11.C.2 | PA M11.D.1.1 | PA M11.D.1.1.1 TOP: 5-3 Example 3

11. ANS: C PTS: 1 DIF: L2 REF: 6-1 Rate of Change and Slope
OBJ: 6-1.1 Finding Rates of Change
NAT: NAEP 2005 M1 | NAEP 2005 A2a | NAEP 2005 A2b | ADP J.4.1 | ADP K.10.1
STA: PA M11.C.2 | PA M11.D.3 | PA M11.D.3.1.1 | PA M11.D.3.1.2 | PA M11.D.3.2 | PA M11.D.3.2.1
TOP: 6-1 Example 1 KEY: rate of change
12. ANS: B PTS: 1 DIF: L2 REF: 6-1 Rate of Change and Slope
OBJ: 6-1.1 Finding Rates of Change
NAT: NAEP 2005 M1 | NAEP 2005 A2a | NAEP 2005 A2b | ADP J.4.1 | ADP K.10.1
STA: PA M11.C.2 | PA M11.D.3 | PA M11.D.3.1.1 | PA M11.D.3.1.2 | PA M11.D.3.2 | PA M11.D.3.2.1
TOP: 6-1 Example 2 KEY: graphing | rate of change
13. ANS: D PTS: 1 DIF: L2 REF: 6-1 Rate of Change and Slope
OBJ: 6-1.2 Finding Slope
NAT: NAEP 2005 M1 | NAEP 2005 A2a | NAEP 2005 A2b | ADP J.4.1 | ADP K.10.1
STA: PA M11.C.2 | PA M11.D.3 | PA M11.D.3.1.1 | PA M11.D.3.1.2 | PA M11.D.3.2 | PA M11.D.3.2.1
TOP: 6-1 Example 3 KEY: graphing | finding slope using a graph | slope
14. ANS: B PTS: 1 DIF: L2 REF: 6-1 Rate of Change and Slope
OBJ: 6-1.2 Finding Slope
NAT: NAEP 2005 M1 | NAEP 2005 A2a | NAEP 2005 A2b | ADP J.4.1 | ADP K.10.1
STA: PA M11.C.2 | PA M11.D.3 | PA M11.D.3.1.1 | PA M11.D.3.1.2 | PA M11.D.3.2 | PA M11.D.3.2.1
TOP: 6-1 Example 3 KEY: finding slope using a graph | slope | graphing
15. ANS: B PTS: 1 DIF: L2 REF: 6-1 Rate of Change and Slope
OBJ: 6-1.2 Finding Slope
NAT: NAEP 2005 M1 | NAEP 2005 A2a | NAEP 2005 A2b | ADP J.4.1 | ADP K.10.1
STA: PA M11.C.2 | PA M11.D.3 | PA M11.D.3.1.1 | PA M11.D.3.1.2 | PA M11.D.3.2 | PA M11.D.3.2.1
TOP: 6-1 Example 4 KEY: finding slope using points | slope
16. ANS: B PTS: 1 DIF: L2 REF: 6-1 Rate of Change and Slope
OBJ: 6-1.2 Finding Slope
NAT: NAEP 2005 M1 | NAEP 2005 A2a | NAEP 2005 A2b | ADP J.4.1 | ADP K.10.1
STA: PA M11.C.2 | PA M11.D.3 | PA M11.D.3.1.1 | PA M11.D.3.1.2 | PA M11.D.3.2 | PA M11.D.3.2.1
TOP: 6-1 Example 5 KEY: slope | horizontal and vertical lines | undefined slope
17. ANS: D PTS: 1 DIF: L3 REF: 6-1 Rate of Change and Slope
OBJ: 6-1.1 Finding Rates of Change
NAT: NAEP 2005 M1 | NAEP 2005 A2a | NAEP 2005 A2b | ADP J.4.1 | ADP K.10.1
STA: PA M11.C.2 | PA M11.D.3 | PA M11.D.3.1.1 | PA M11.D.3.1.2 | PA M11.D.3.2 | PA M11.D.3.2.1
TOP: 6-1 Example 2
KEY: graphing | rate of change | problem solving | word problem | multi-part question
18. ANS: B PTS: 1 DIF: L3 REF: 6-2 Slope-Intercept Form
OBJ: 6-2.1 Writing Linear Equations NAT: NAEP 2005 A1h | ADP J.4.1 | ADP J.4.2 | ADP K.10.2
STA: PA M11.C.2 | PA M11.D.2.1 | PA M11.D.3.2.2 | PA M11.D.3.2.3
TOP: 6-2 Example 1 KEY: slope | linear equation | y-intercept
19. ANS: B PTS: 1 DIF: L3 REF: 6-2 Slope-Intercept Form
OBJ: 6-2.1 Writing Linear Equations NAT: NAEP 2005 A1h | ADP J.4.1 | ADP J.4.2 | ADP K.10.2
STA: PA M11.C.2 | PA M11.D.2.1 | PA M11.D.3.2.2 | PA M11.D.3.2.3
TOP: 6-2 Example 2 KEY: linear equation | slope | y-intercept

20. ANS: C PTS: 1 DIF: L2 REF: 6-2 Slope-Intercept Form
OBJ: 6-2.1 Writing Linear Equations NAT: NAEP 2005 A1h | ADP J.4.1 | ADP J.4.2 | ADP K.10.2
STA: PA M11.C.2 | PA M11.D.2.1 | PA M11.D.3.2.2 | PA M11.D.3.2.3
TOP: 6-2 Example 3
KEY: graphing | slope | y-intercept | slope-intercept form | finding slope using a graph

21. ANS: C PTS: 1 DIF: L3 REF: 6-2 Slope-Intercept Form
OBJ: 6-2.1 Writing Linear Equations NAT: NAEP 2005 A1h | ADP J.4.1 | ADP J.4.2 | ADP K.10.2
STA: PA M11.C.2 | PA M11.D.2.1 | PA M11.D.3.2.2 | PA M11.D.3.2.3
TOP: 6-2 Example 3
KEY: graphing | slope | y-intercept | slope-intercept form | finding slope using a graph

22. ANS: D PTS: 1 DIF: L2 REF: 6-2 Slope-Intercept Form
OBJ: 6-2.2 Graphing Linear Equations NAT: NAEP 2005 A1h | ADP J.4.1 | ADP J.4.2 | ADP K.10.2
STA: PA M11.C.2 | PA M11.D.2.1 | PA M11.D.3.2.2 | PA M11.D.3.2.3
TOP: 6-2 Example 4 KEY: linear equation | graphing equations | slope | y-intercept

23. ANS: C PTS: 1 DIF: L2 REF: 6-4 Standard Form
OBJ: 6-4.1 Graphing Equations Using Intercepts
NAT: NAEP 2005 A1h | ADP J.4.1 | ADP J.4.2 | ADP K.10.2
STA: PA M11.C.2 | PA M11.D.2.1 | PA M11.D.2.1.3 TOP: 6-4 Example 1
KEY: x-intercept | y-intercept | standard form of a linear equation

24. ANS: D PTS: 1 DIF: L2 REF: 6-4 Standard Form
OBJ: 6-4.1 Graphing Equations Using Intercepts
NAT: NAEP 2005 A1h | ADP J.4.1 | ADP J.4.2 | ADP K.10.2
STA: PA M11.C.2 | PA M11.D.2.1 | PA M11.D.2.1.3 TOP: 6-4 Example 2
KEY: graphing | x-intercept | y-intercept | standard form of a linear equation

25. ANS: A PTS: 1 DIF: L3 REF: 6-4 Standard Form
OBJ: 6-4.2 Writing Equations in Standard Form
NAT: NAEP 2005 A1h | ADP J.4.1 | ADP J.4.2 | ADP K.10.2
STA: PA M11.C.2 | PA M11.D.2.1 | PA M11.D.2.1.3 TOP: 6-4 Example 5
KEY: standard form of a linear equation | word problem | problem solving

26. ANS: A PTS: 1 DIF: L2
REF: 6-5 Point-Slope Form and Writing Linear Equations OBJ: 6-5.1 Using Point-Slope Form
NAT: NAEP 2005 A1h | NAEP 2005 A1i | NAEP 2005 A2a | NAEP 2005 A2b | NAEP 2005 A3a | ADP J.4.1 | ADP J.4.2 | ADP K.10.1 | ADP K.10.2
STA: PA M11.C.2 | PA M11.D.2.1 | PA M11.D.2.1.3 TOP: 6-5 Example 1
KEY: point-slope form | graphing | linear equation

27. ANS: A PTS: 1 DIF: L3
REF: 6-5 Point-Slope Form and Writing Linear Equations OBJ: 6-5.1 Using Point-Slope Form
NAT: NAEP 2005 A1h | NAEP 2005 A1i | NAEP 2005 A2a | NAEP 2005 A2b | NAEP 2005 A3a | ADP J.4.1 | ADP J.4.2 | ADP K.10.1 | ADP K.10.2
STA: PA M11.C.2 | PA M11.D.2.1 | PA M11.D.2.1.3 TOP: 6-5 Example 3
KEY: point-slope form | transforming equations | standard form of a linear equation | multi-part question

28. ANS: A PTS: 1 DIF: L4
REF: 6-5 Point-Slope Form and Writing Linear Equations OBJ: 6-5.1 Using Point-Slope Form
NAT: NAEP 2005 A1h | NAEP 2005 A1i | NAEP 2005 A2a | NAEP 2005 A2b | NAEP 2005 A3a | ADP J.4.1 | ADP J.4.2 | ADP K.10.1 | ADP K.10.2
STA: PA M11.C.2 | PA M11.D.2.1 | PA M11.D.2.1.3
KEY: point-slope form | problem solving | word problem

29. ANS: C PTS: 1 DIF: L2
REF: 6-6 Parallel and Perpendicular Lines OBJ: 6-6.1 Parallel Lines
NAT: NAEP 2005 G3g | NAEP 2005 A2e | ADP K.2.1 | ADP K.2.2 | ADP K.10.1 | ADP K.10.2
STA: PA M11.C.2 | PA M11.C.2.1.2 | PA M11.D.2.1 | PA M11.D.2.1.3
TOP: 6-6 Example 1 KEY: parallel lines | slope
30. ANS: A PTS: 1 DIF: L2
REF: 6-6 Parallel and Perpendicular Lines OBJ: 6-6.1 Parallel Lines
NAT: NAEP 2005 G3g | NAEP 2005 A2e | ADP K.2.1 | ADP K.2.2 | ADP K.10.1 | ADP K.10.2
STA: PA M11.C.2 | PA M11.C.2.1.2 | PA M11.D.2.1 | PA M11.D.2.1.3
TOP: 6-6 Example 1 KEY: parallel lines | slope
31. ANS: D PTS: 1 DIF: L3 REF: 7-1 Solving Systems By Graphing
OBJ: 7-1.1 Solving Systems By Graphing
NAT: NAEP 2005 A4d | NAEP 2005 A4g | ADP J.3.3 | ADP J.4.3 | ADP J.5.2
STA: PA M11.D.2.1.4 TOP: 7-1 Example 1
KEY: system of linear equations | graphing a system of linear equations
32. ANS: D PTS: 1 DIF: L2 REF: 7-1 Solving Systems By Graphing
OBJ: 7-1.1 Solving Systems By Graphing
NAT: NAEP 2005 A4d | NAEP 2005 A4g | ADP J.3.3 | ADP J.4.3 | ADP J.5.2
STA: PA M11.D.2.1.4 TOP: 7-1 Example 1
KEY: system of linear equations | graphing a system of linear equations
33. ANS: D PTS: 1 DIF: L3 REF: 7-1 Solving Systems By Graphing
OBJ: 7-1.1 Solving Systems By Graphing
NAT: NAEP 2005 A4d | NAEP 2005 A4g | ADP J.3.3 | ADP J.4.3 | ADP J.5.2
STA: PA M11.D.2.1.4
KEY: system of linear equations | graphing a system of linear equations
34. ANS: D PTS: 1 DIF: L3
REF: 7-2 Solving Systems Using Substitution OBJ: 7-2.1 Using Substitution
NAT: NAEP 2005 A4g | ADP J.3.3 | ADP J.5.2 STA: PA M11.D.2.1.4
TOP: 7-2 Example 2 KEY: system of linear equations | substitution method
35. ANS: A PTS: 1 DIF: L2
REF: 7-3 Solving Systems Using Elimination
OBJ: 7-3.1 Adding or Subtracting to Solve Systems
NAT: NAEP 2005 A4g | ADP J.3.3 | ADP J.5.2 STA: PA M11.D.2.1.4
TOP: 7-3 Example 2
KEY: word problem | problem solving | system of linear equations | elimination method | adding or subtracting equations
36. ANS: C PTS: 1 DIF: L2
REF: 7-3 Solving Systems Using Elimination
OBJ: 7-3.2 Multiplying First to Solve Systems
NAT: NAEP 2005 A4g | ADP J.3.3 | ADP J.5.2 STA: PA M11.D.2.1.4
TOP: 7-3 Example 3
KEY: system of linear equations | elimination method | adding or subtracting equations

37. ANS: B PTS: 1 DIF: L2
REF: 7-3 Solving Systems Using Elimination
OBJ: 7-3.2 Multiplying First to Solve Systems
NAT: NAEP 2005 A4g | ADP J.3.3 | ADP J.5.2 STA: PA M11.D.2.1.4
TOP: 7-3 Example 4
KEY: word problem | problem solving | system of linear equations | elimination method | adding or subtracting equations

38. ANS: A PTS: 1 DIF: L2 REF: 7-6 Systems of Linear Inequalities
OBJ: 7-6.1 Solving Systems of Linear Inequalities by Graphing
NAT: NAEP 2005 A4g | ADP J.4.4 STA: PA M11.D.2.1.2
TOP: 7-6 Example 1
KEY: linear inequality | graphing | system of linear inequalities | graphing a system of linear inequalities

39. ANS: B PTS: 1 DIF: L2 REF: 7-6 Systems of Linear Inequalities
OBJ: 7-6.1 Solving Systems of Linear Inequalities by Graphing
NAT: NAEP 2005 A4g | ADP J.4.4 STA: PA M11.D.2.1.2
TOP: 7-6 Example 1
KEY: linear inequality | graphing | system of linear inequalities | graphing a system of linear inequalities

40. ANS: D PTS: 1 DIF: L2 REF: 7-6 Systems of Linear Inequalities
OBJ: 7-6.1 Solving Systems of Linear Inequalities by Graphing
NAT: NAEP 2005 A4g | ADP J.4.4 STA: PA M11.D.2.1.2
TOP: 7-6 Example 2
KEY: linear inequality | graphing | system of linear inequalities | graphing a system of linear inequalities

41. ANS: D PTS: 1 DIF: L2 REF: 8-1 Zero and Negative Exponents
OBJ: 8-1.1 Zero and Negative Exponents NAT: ADP J.1.1 | ADP J.1.6
STA: PA M11.A.1.1 | PA M11.A.2.2 TOP: 8-1 Example 1
KEY: zero as an exponent | negative exponent | simplfying a power

42. ANS: D PTS: 1 DIF: L2 REF: 8-1 Zero and Negative Exponents
OBJ: 8-1.1 Zero and Negative Exponents NAT: ADP J.1.1 | ADP J.1.6
STA: PA M11.A.1.1 | PA M11.A.2.2 TOP: 8-1 Example 1
KEY: zero as an exponent | negative exponent | simplfying a power

43. ANS: C PTS: 1 DIF: L2 REF: 8-1 Zero and Negative Exponents
OBJ: 8-1.1 Zero and Negative Exponents NAT: ADP J.1.1 | ADP J.1.6
STA: PA M11.A.1.1 | PA M11.A.2.2 TOP: 8-1 Example 1
KEY: zero as an exponent | negative exponent | simplfying a power

44. ANS: C PTS: 1 DIF: L2 REF: 8-1 Zero and Negative Exponents
OBJ: 8-1.1 Zero and Negative Exponents NAT: ADP J.1.1 | ADP J.1.6
STA: PA M11.A.1.1 | PA M11.A.2.2 TOP: 8-1 Example 2
KEY: zero as an exponent | negative exponent | simplifying an exponential expression

45. ANS: D PTS: 1 DIF: L2 REF: 8-1 Zero and Negative Exponents
OBJ: 8-1.1 Zero and Negative Exponents NAT: ADP J.1.1 | ADP J.1.6
STA: PA M11.A.1.1 | PA M11.A.2.2 TOP: 8-1 Example 2
KEY: negative exponent | simplifying an exponential expression

46. ANS: C PTS: 1 DIF: L2
REF: 8-3 Mulitplication Properties of Exponents OBJ: 8-3.1 Multiplying Powers
NAT: ADP I.1.5 | ADP J.1.1 STA: PA M11.A.2.1.1 | PA M11.A.2.2.2
TOP: 8-3 Example 2
KEY: exponential expression | simplifying an exponential expression | multiplying powers with the same base

47. ANS: A PTS: 1 DIF: L2
REF: 8-3 Mulitplication Properties of Exponents OBJ: 8-3.1 Multiplying Powers
NAT: ADP I.1.5 | ADP J.1.1 STA: PA M11.A.2.1.1 | PA M11.A.2.2.2
TOP: 8-1 Example 2
KEY: exponential expression | simplifying an exponential expression | multiplying powers with the same base

48. ANS: A PTS: 1 DIF: L2
REF: 8-3 Mulitplication Properties of Exponents OBJ: 8-3.1 Multiplying Powers
NAT: ADP I.1.5 | ADP J.1.1 STA: PA M11.A.2.1.1 | PA M11.A.2.2.2
TOP: 8-3 Example 2
KEY: exponential expression | simplifying an exponential expression | multiplying powers with the same base

49. ANS: B PTS: 1 DIF: L3
REF: 8-3 Mulitplication Properties of Exponents OBJ: 8-3.1 Multiplying Powers
NAT: ADP I.1.5 | ADP J.1.1 STA: PA M11.A.2.1.1 | PA M11.A.2.2.2
TOP: 8-3 Example 2
KEY: multiplying powers with the same base | exponential expression | simplifying an exponential expression

50. ANS: D PTS: 1 DIF: L2
REF: 8-4 More Multiplication Properties of Exponents OBJ: 8-4.1 Raising a Power to a Power
NAT: ADP I.1.5 | ADP J.1.1 STA: PA M11.A.2.1.1 | PA M11.A.2.2.2
TOP: 8-4 Example 1
KEY: raising a power to a power | exponential expression | simplifying an exponential expression

51. ANS: A PTS: 1 DIF: L2
REF: 8-4 More Multiplication Properties of Exponents OBJ: 8-4.2 Raising a Product to a Power
NAT: ADP I.1.5 | ADP J.1.1 STA: PA M11.A.2.1.1 | PA M11.A.2.2.2
TOP: 8-4 Example 3
KEY: raising a product to a power | exponential expression | simplifying an exponential expression

52. ANS: A PTS: 1 DIF: L2
REF: 8-4 More Multiplication Properties of Exponents OBJ: 8-4.2 Raising a Product to a Power
NAT: ADP I.1.5 | ADP J.1.1 STA: PA M11.A.2.1.1 | PA M11.A.2.2.2
TOP: 8-4 Example 4
KEY: raising a product to a power | exponential expression | simplifying an exponential expression

53. ANS: A PTS: 1 DIF: L3
REF: 8-4 More Multiplication Properties of Exponents OBJ: 8-4.2 Raising a Product to a Power
NAT: ADP I.1.5 | ADP J.1.1 STA: PA M11.A.2.1.1 | PA M11.A.2.2.2
TOP: 8-4 Example 4
KEY: exponential expression | raising a product to a power | simplifying an exponential expression

54. ANS: A PTS: 1 DIF: L2
REF: 8-5 Division Properties of Exponents
OBJ: 8-5.1 Dividing Powers With the Same Base NAT: ADP I.1.5 | ADP I.2.2 | ADP J.1.1
STA: PA M11.A.2.1.1 | PA M11.A.2.2.2 TOP: 8-5 Example 1
KEY: dividing powers with the same base | exponential expression

55. ANS: D PTS: 1 DIF: L2
REF: 8-5 Division Properties of Exponents
OBJ: 8-5.1 Dividing Powers With the Same Base NAT: ADP I.1.5 | ADP I.2.2 | ADP J.1.1
STA: PA M11.A.2.1.1 | PA M11.A.2.2.2 TOP: 8-5 Example 1
KEY: dividing powers with the same base | exponential expression

56. ANS: A PTS: 1 DIF: L2
REF: 8-5 Division Properties of Exponents
OBJ: 8-5.1 Dividing Powers With the Same Base NAT: ADP I.1.5 | ADP I.2.2 | ADP J.1.1
STA: PA M11.A.2.1.1 | PA M11.A.2.2.2 TOP: 8-5 Example 1
KEY: dividing powers with the same base | exponential expression

57. ANS: C PTS: 1 DIF: L2
REF: 8-5 Division Properties of Exponents
OBJ: 8-5.1 Dividing Powers With the Same Base NAT: ADP I.1.5 | ADP I.2.2 | ADP J.1.1
STA: PA M11.A.2.1.1 | PA M11.A.2.2.2 TOP: 8-5 Example 1
KEY: dividing powers with the same base | exponential expression

58. ANS: A PTS: 1 DIF: L2
REF: 8-5 Division Properties of Exponents OBJ: 8-5.2 Raising a Quotient to a Power
NAT: ADP I.1.5 | ADP I.2.2 | ADP J.1.1 STA: PA M11.A.2.1.1 | PA M11.A.2.2.2
TOP: 8-5 Example 3 KEY: raising a quotient to a power | exponential expression

59. ANS: B PTS: 1 DIF: L3
REF: 8-5 Division Properties of Exponents OBJ: 8-5.2 Raising a Quotient to a Power
NAT: ADP I.1.5 | ADP I.2.2 | ADP J.1.1 STA: PA M11.A.2.1.1 | PA M11.A.2.2.2
TOP: 8-5 Example 4
KEY: raising a quotient to a power | simplifying an exponential expression | exponential expression

60. ANS: C PTS: 1 DIF: L2
REF: 11-2 Operations With Radical Expressions
OBJ: 11-2.1 Simplifying Sums and Differences
NAT: NAEP 2005 A3b | ADP I.4.1 | ADP J.1.1 STA: PA M11.A.2.2.1
TOP: 11-2 Example 2 KEY: like radicals | combining like radicals | radical expressions

61. ANS: D PTS: 1 DIF: L2
REF: 11-2 Operations With Radical Expressions
OBJ: 11-2.2 Simplifying Products and Quotients
NAT: NAEP 2005 A3b | ADP I.4.1 | ADP J.1.1 STA: PA M11.A.2.2.1
TOP: 11-2 Example 4
KEY: FOIL | radical expressions | Multiplication Property of Square Roots

62. ANS: B PTS: 1 DIF: L2
REF: 11-2 Operations With Radical Expressions
OBJ: 11-2.2 Simplifying Products and Quotients
NAT: NAEP 2005 A3b | ADP I.4.1 | ADP J.1.1 STA: PA M11.A.2.2.1
TOP: 11-2 Example 3
KEY: Multiplication Property of Square Roots | Distributive Property | radical expressions

63. ANS: D PTS: 1 DIF: L3
REF: 11-2 Operations With Radical Expressions
OBJ: 11-2.2 Simplifying Products and Quotients
NAT: NAEP 2005 A3b | ADP I.4.1 | ADP J.1.1 STA: PA M11.A.2.2.1
TOP: 11-2 Example 5 KEY: radical expressions | rationalize | conjugates

64. ANS: B PTS: 1 DIF: L3
REF: 11-2 Operations With Radical Expressions
OBJ: 11-2.2 Simplifying Products and Quotients
NAT: NAEP 2005 A3b | ADP I.4.1 | ADP J.1.1 STA: PA M11.A.2.2.1
TOP: 11-2 Example 5 KEY: conjugates | radical expressions | FOIL | rationalize

65. ANS: B PTS: 1 DIF: L2 REF: 8-1 Zero and Negative Exponents
OBJ: 8-1.2 Evaluating Exponential Expressions NAT: ADP J.1.1 | ADP J.1.6
STA: PA M11.A.1.1 | PA M11.A.2.2 TOP: 8-1 Example 3
KEY: negative exponent | simplifying an exponential expression | evaluating exponential expression

66. ANS: A PTS: 1 DIF: L3
REF: 9-1 Adding and Subtracting Polynomials OBJ: 9-1.1 Describing Polynomials
NAT: NAEP 2005 A3b | ADP J.1.3 STA: PA M11.D.2.2 | PA M11.D.2.2.1
TOP: 9-1 Example 2
KEY: monomial | degree of a monomial | polynomial | degree of a polynomial | standard form of a polynomial | trinomial | classifying polynomials | multi-part question

67. ANS: D PTS: 1 DIF: L2
REF: 9-1 Adding and Subtracting Polynomials
OBJ: 9-1.2 Adding and Subtracting Polynomials NAT: NAEP 2005 A3b | ADP J.1.3
STA: PA M11.D.2.2 | PA M11.D.2.2.1 TOP: 9-1 Example 4
KEY: monomial | degree of a monomial | polynomial | degree of a polynomial | subtracting polynomials | standard form of a polynomial | trinomial

68. ANS: D PTS: 1 DIF: L3
REF: 9-1 Adding and Subtracting Polynomials
OBJ: 9-1.2 Adding and Subtracting Polynomials NAT: NAEP 2005 A3b | ADP J.1.3
STA: PA M11.D.2.2 | PA M11.D.2.2.1 TOP: 9-1 Example 3
KEY: monomial | degree of a monomial | polynomial | adding polynomials | degree of a polynomial | standard form of a polynomial | trinomial

69. ANS: B PTS: 1 DIF: L3 REF: 9-2 Multiplying and Factoring
OBJ: 9-2.1 Distributing a Monomial
NAT: NAEP 2005 N5b | NAEP 2005 A3b | NAEP 2005 A3c | ADP J.1.3 | ADP J.1.4
STA: PA M11.D.2.2.1 | PA M11.D.2.2.2 TOP: 9-2 Example 1
KEY: polynomial | multiplying a monomial and a trinomial

70. ANS: B PTS: 1 DIF: L3 REF: 9-2 Multiplying and Factoring
OBJ: 9-2.2 Factoring a Monomial from a Polynomial
NAT: NAEP 2005 N5b | NAEP 2005 A3b | NAEP 2005 A3c | ADP J.1.3 | ADP J.1.4
STA: PA M11.D.2.2.1 | PA M11.D.2.2.2 TOP: 9-2 Example 3
KEY: polynomial | greatest common factor in a polynomial | factoring out a monomial

71. ANS: D PTS: 1 DIF: L3 REF: 9-3 Multiplying Binomials
OBJ: 9-3.1 Multiplying Two Binomials
NAT: NAEP 2005 M1h | NAEP 2005 A3c | ADP J.1.3 | ADP K.8.2
STA: PA M11.D.2.2.1 TOP: 9-3 Example 2
KEY: polynomial | FOIL

72. ANS: C PTS: 1 DIF: L3 REF: 9-3 Multiplying Binomials
OBJ: 9-3.1 Multiplying Two Binomials
NAT: NAEP 2005 M1h | NAEP 2005 A3c | ADP J.1.3 | ADP K.8.2
STA: PA M11.D.2.2.1 TOP: 9-3 Example 2
KEY: polynomial | FOIL

73. ANS: B PTS: 1 DIF: L2 REF: 9-3 Multiplying Binomials
OBJ: 9-3.2 Multiplying a Trinomial and a Binomial
NAT: NAEP 2005 M1h | NAEP 2005 A3c | ADP J.1.3 | ADP K.8.2
STA: PA M11.D.2.2.1 TOP: 9-3 Example 4
KEY: polynomial | multiplying a binomial and a trinomial

74. ANS: A PTS: 1 DIF: L2 REF: 9-4 Multiplying Special Cases
OBJ: 9-4.1 Finding the Square of a Binomial NAT: NAEP 2005 A3c | ADP J.1.3
STA: PA M11.D.2.2.1 TOP: 9-4 Example 1
KEY: polynomial | square of a binomial

75. ANS: B PTS: 1 DIF: L3 REF: 9-4 Multiplying Special Cases
OBJ: 9-4.1 Finding the Square of a Binomial NAT: NAEP 2005 A3c | ADP J.1.3
STA: PA M11.D.2.2.1 TOP: 9-4 Example 1
KEY: polynomial | square of a binomial

76. ANS: C PTS: 1 DIF: L3 REF: 9-4 Multiplying Special Cases
OBJ: 9-4.1 Finding the Square of a Binomial NAT: NAEP 2005 A3c | ADP J.1.3
STA: PA M11.D.2.2.1 TOP: 9-4 Example 2
KEY: polynomial | square of a binomial | subtracting polynomials

77. ANS: A PTS: 1 DIF: L3 REF: 9-4 Multiplying Special Cases
OBJ: 9-4.2 Difference of Squares NAT: NAEP 2005 A3c | ADP J.1.3
STA: PA M11.D.2.2.1 TOP: 9-4 Example 4
KEY: polynomial | difference of squares

78. ANS: C PTS: 1 DIF: L3
REF: 9-5 Factoring Trinomials of the Type x^2 + bx + c OBJ: 9-5.1 Factoring Trinomials
NAT: NAEP 2005 A3c | ADP J.1.4 STA: PA M11.D.2.2.2
TOP: 9-5 Example 1 KEY: polynomial | factoring trinomials

79. ANS: D PTS: 1 DIF: L3
REF: 9-5 Factoring Trinomials of the Type x^2 + bx + c OBJ: 9-5.1 Factoring Trinomials
NAT: NAEP 2005 A3c | ADP J.1.4 STA: PA M11.D.2.2.2
TOP: 9-5 Example 1 KEY: polynomial | factoring trinomials

80. ANS: C PTS: 1 DIF: L2
REF: 9-6 Factoring Trinomials of the Type ax^2 + bx + c OBJ: 9-6.1 Factoring ax^2 + bx + c
NAT: NAEP 2005 A3c | ADP J.1.4 STA: PA M11.D.2.2.2
TOP: 9-6 Example 2 KEY: polynomial | factoring trinomials

81. ANS: A PTS: 1 DIF: L3
REF: 9-6 Factoring Trinomials of the Type ax^2 + bx + c OBJ: 9-6.1 Factoring ax^2 + bx + c
NAT: NAEP 2005 A3c | ADP J.1.4 STA: PA M11.D.2.2.2
TOP: 9-6 Example 3
KEY: polynomial | factoring trinomials | factoring out a monomial

82. ANS: B PTS: 1 DIF: L2 REF: 9-7 Factoring Special Cases
OBJ: 9-7.1 Factoring Perfect-Square Trinomials NAT: ADP J.1.4
STA: PA M11.D.2.2.2 TOP: 9-7 Example 1
KEY: polynomial | factoring trinomials | perfect-square trinomial

83. ANS: B PTS: 1 DIF: L3 REF: 9-7 Factoring Special Cases
OBJ: 9-7.1 Factoring Perfect-Square Trinomials NAT: ADP J.1.4
STA: PA M11.D.2.2.2 TOP: 9-7 Example 2
KEY: polynomial | factoring trinomials | perfect-square trinomial

84. ANS: A PTS: 1 DIF: L2 REF: 9-7 Factoring Special Cases
OBJ: 9-7.2 Factoring the Difference of Squares NAT: ADP J.1.4
STA: PA M11.D.2.2.2 TOP: 9-7 Example 3
KEY: polynomial | factoring trinomials | difference of squares

85. ANS: B PTS: 1 DIF: L3 REF: 9-7 Factoring Special Cases
OBJ: 9-7.2 Factoring the Difference of Squares NAT: ADP J.1.4
STA: PA M11.D.2.2.2 TOP: 9-7 Example 4
KEY: polynomial | factoring trinomials | difference of squares

86. ANS: C PTS: 1 DIF: L2 REF: 11-1 Simplifying Radicals
OBJ: 11-1.1 Simplifying Radical Expressions Involving Products
NAT: NAEP 2005 N3a | NAEP 2005 N5b | NAEP 2005 A3b | NAEP 2005 A3c | ADP J.1.1 | ADP J.1.6
STA: PA M11.A.1.1 | PA M11.A.2.2.1 TOP: 11-1 Example 1
KEY: radical expressions | Multiplication Property of Square Roots | square root

87. ANS: C PTS: 1 DIF: L2 REF: 11-1 Simplifying Radicals
OBJ: 11-1.1 Simplifying Radical Expressions Involving Products
NAT: NAEP 2005 N3a | NAEP 2005 N5b | NAEP 2005 A3b | NAEP 2005 A3c | ADP J.1.1 | ADP J.1.6
STA: PA M11.A.1.1 | PA M11.A.2.2.1 TOP: 11-1 Example 2
KEY: radical expressions | Multiplication Property of Square Roots | square root

88. ANS: B PTS: 1 DIF: L2 REF: 11-1 Simplifying Radicals
OBJ: 11-1.1 Simplifying Radical Expressions Involving Products
NAT: NAEP 2005 N3a | NAEP 2005 N5b | NAEP 2005 A3b | NAEP 2005 A3c | ADP J.1.1 | ADP J.1.6
STA: PA M11.A.1.1 | PA M11.A.2.2.1 TOP: 11-1 Example 3
KEY: multiplying two radicals | Multiplication Property of Square Roots | radical expressions

89. ANS: D PTS: 1 DIF: L2 REF: 11-1 Simplifying Radicals
OBJ: 11-1.2 Simplifying Radical Expressions Involving Quotients
NAT: NAEP 2005 N3a | NAEP 2005 N5b | NAEP 2005 A3b | NAEP 2005 A3c | ADP J.1.1 | ADP J.1.6
STA: PA M11.A.1.1 | PA M11.A.2.2.1 TOP: 11-1 Example 5
KEY: Division Property of Square Roots | radical expressions | fractions within a radical

90. ANS: B PTS: 1 DIF: L2 REF: 11-1 Simplifying Radicals
OBJ: 11-1.2 Simplifying Radical Expressions Involving Quotients
NAT: NAEP 2005 N3a | NAEP 2005 N5b | NAEP 2005 A3b | NAEP 2005 A3c | ADP J.1.1 | ADP J.1.6
STA: PA M11.A.1.1 | PA M11.A.2.2.1 TOP: 11-1 Example 5
KEY: Division Property of Square Roots | radical expressions | fractions within a radical

91. ANS: A PTS: 1 DIF: L2 REF: 11-1 Simplifying Radicals
OBJ: 11-1.2 Simplifying Radical Expressions Involving Quotients
NAT: NAEP 2005 N3a | NAEP 2005 N5b | NAEP 2005 A3b | NAEP 2005 A3c | ADP J.1.1 | ADP J.1.6
STA: PA M11.A.1.1 | PA M11.A.2.2.1 TOP: 11-1 Example 6
KEY: simplying radicals by dividing | square root | radical expressions | fractions within a radical

92. ANS: B PTS: 1 DIF: L4 REF: 11-1 Simplifying Radicals
OBJ: 11-1.2 Simplifying Radical Expressions Involving Quotients
NAT: NAEP 2005 N3a | NAEP 2005 N5b | NAEP 2005 A3b | NAEP 2005 A3c | ADP J.1.1 | ADP J.1.6
STA: PA M11.A.1.1 | PA M11.A.2.2.1 TOP: 11-1 Example 6
KEY: fractions within a radical | Division Property of Square Roots | radical expressions |

93. ANS: A PTS: 1 DIF: L2 REF: 11-1 Simplifying Radicals
OBJ: 11-1.2 Simplifying Radical Expressions Involving Quotients
NAT: NAEP 2005 N3a | NAEP 2005 N5b | NAEP 2005 A3b | NAEP 2005 A3c | ADP J.1.1 | ADP J.1.6
STA: PA M11.A.1.1 | PA M11.A.2.2.1 TOP: 11-1 Example 7
KEY: radical expressions | rationalize | radicand in the denominator

94. ANS: B PTS: 1 DIF: L3 REF: 11-1 Simplifying Radicals
OBJ: 11-1.2 Simplifying Radical Expressions Involving Quotients
NAT: NAEP 2005 N3a | NAEP 2005 N5b | NAEP 2005 A3b | NAEP 2005 A3c | ADP J.1.1 | ADP J.1.6
STA: PA M11.A.1.1 | PA M11.A.2.2.1 TOP: 11-1 Example 7
KEY: Division Property of Square Roots | rationalize | radicand in the denominator | radical expressions

95. ANS: A PTS: 1 DIF: L1
REF: 12-2 Simplifying Rational Functions
OBJ: 12-2.1 Simplifying Rational Expressions
NAT: NAEP 2005 A3c | ADP J.1.5 | ADP J.1.6
STA: PA M11.A.2 | PA M11.D.2.2 | PA M11.D.2.2.2 TOP: 12-2 Example 1
KEY: rational expression

96. ANS: A PTS: 1 DIF: L1
REF: 12-2 Simplifying Rational Functions
OBJ: 12-2.1 Simplifying Rational Expressions
NAT: NAEP 2005 A3c | ADP J.1.5 | ADP J.1.6
STA: PA M11.A.2 | PA M11.D.2.2 | PA M11.D.2.2.2 TOP: 12-2 Example 2
KEY: rational expression

97. ANS: A PTS: 1 DIF: L1
REF: 12-2 Simplifying Rational Functions
OBJ: 12-2.1 Simplifying Rational Expressions
NAT: NAEP 2005 A3c | ADP J.1.5 | ADP J.1.6
STA: PA M11.A.2 | PA M11.D.2.2 | PA M11.D.2.2.2 TOP: 12-2 Example 3
KEY: rational expression

98. ANS: B PTS: 1 DIF: L1
REF: 12-2 Simplifying Rational Functions
OBJ: 12-2.1 Simplifying Rational Expressions
NAT: NAEP 2005 A3c | ADP J.1.5 | ADP J.1.6
STA: PA M11.A.2 | PA M11.D.2.2 | PA M11.D.2.2.2 TOP: 12-2 Example 2
KEY: rational expression

99. ANS: B PTS: 1 DIF: L1
REF: 12-2 Simplifying Rational Functions
OBJ: 12-2.1 Simplifying Rational Expressions
NAT: NAEP 2005 A3c | ADP J.1.5 | ADP J.1.6
STA: PA M11.A.2 | PA M11.D.2.2 | PA M11.D.2.2.2 TOP: 12-2 Example 2
KEY: rational expression

100. ANS: D PTS: 1 DIF: L3
REF: 4-6 Absolute Value Equations and Inequalities
OBJ: 4-6.2 Solving Absolute Value Inequalities
NAT: NAEP 2005 N1g | NAEP 2005 A4a | NAEP 2005 A4c | ADP J.3.1
STA: PA M11.A.2.2.1 | PA M11.D.2.1.1 | PA M11.D.1.1.3 TOP: 4-6 Example 3
KEY: solving absolute value inequalities | graphing | solving a compound inequality containing OR

101. ANS: B PTS: 1 DIF: L3
REF: 4-6 Absolute Value Equations and Inequalities
OBJ: 4-6.2 Solving Absolute Value Inequalities
NAT: NAEP 2005 N1g | NAEP 2005 A4a | NAEP 2005 A4c | ADP J.3.1
STA: PA M11.A.2.2.1 | PA M11.D.2.1.1 | PA M11.D.1.1.3 TOP: 4-6 Example 3
KEY: solving absolute value inequalities | graphing | solving a compound inequality containing AND

102. ANS: A PTS: 1 DIF: L2 REF: 4-5 Compound Inequalities
OBJ: 4-5.2 Solving Compound Inequalities Joined by Or
NAT: NAEP 2005 A3a | NAEP 2005 A4c | ADP J.3.1
STA: PA M11.D.2.1 | PA M11.D.2.1.1 | PA M11.D.1.1.3 TOP: 4-5 Example 5
KEY: solving a compound inequality containing OR | graphing | compound inequality

103. ANS: B PTS: 1 DIF: L3
REF: 4-6 Absolute Value Equations and Inequalities
OBJ: 4-6.1 Solving Absolute Value Equations
NAT: NAEP 2005 N1g | NAEP 2005 A4a | NAEP 2005 A4c | ADP J.3.1
STA: PA M11.A.2.2.1 | PA M11.D.2.1.1 | PA M11.D.1.1.3 TOP: 4-6 Example 1
KEY: absolute value | Addition Property of Equality

104. ANS: A PTS: 1 DIF: L3
REF: 4-6 Absolute Value Equations and Inequalities
OBJ: 4-6.1 Solving Absolute Value Equations
NAT: NAEP 2005 N1g | NAEP 2005 A4a | NAEP 2005 A4c | ADP J.3.1
STA: PA M11.A.2.2.1 | PA M11.D.2.1.1 | PA M11.D.1.1.3 TOP: 4-6 Example 1
KEY: absolute value | Addition Property of Equality