22. What is the product of the x and y coordinates of the solution of the system of linear equations?

$$-7x + y = -19$$
$$\underline{+7x \qquad\qquad +7x}$$
$$y = 7x - 19$$

$$-2x + 3y = -19$$
$$\underline{+2x \qquad\qquad +2x}$$
$$\frac{3y}{3} = \frac{2x}{3} - \frac{19}{3}$$
$$y = \left(\tfrac{2}{3}\right)x - \frac{19}{3}$$

* Plug into calc to find Solution
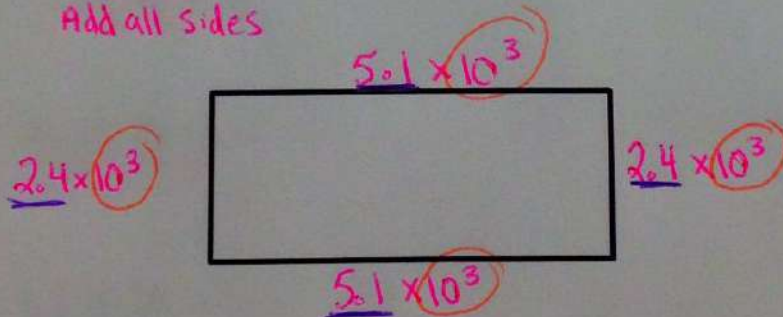$$(2, -5)$$
$$2 \cdot -5 = -10$$

A.   −10
B.   10
C.   7
D.   3

23. Find the <u>perimeter</u> of a rectangle whose length is 5.1×10^3 and width 2.4×10^3.

Add all sides

5.1×10^3

2.4×10^3 2.4×10^3

5.1×10^3

$$5.1 + 2.4 + 5.1 + 2.4 = 15 \times 10^3 + 1$$

$$\boxed{1.50 \times 10^4}$$

24. Find the sum of the first <u>8</u> terms of the sequence $7, -21, 63, -189...$?

$x-3$ $x-3$ $x-3$

$$\frac{7}{1} + \frac{-21}{2} + \frac{63}{3} + \frac{-189}{4} + \frac{567}{5} + \frac{-1701}{6} + \frac{5103}{7} + \frac{-15309}{8}$$

✱ Add all of them in calc ✱

A. $-15,309$

B. $11,480$

C. $-11,480$

D. $-16,531.7$

25. Which of the following sequences is geometric?

Geometric means: multiplication or division

A. $16, 18, 20, 22, ...$
$+2 \quad +2 \quad +2$

B. $30, 25, 20, 15, ...$
$-5 \quad -5 \quad -5$

C. $1, 2, 4, 16, ...$
$\times 2 \quad \times 2 \quad \times 4$

D. $8, 4, 2, 1 ...$
$\div 2 \quad \div 2 \quad \div 2$

26. How many significant figures does the number given have?

$$7050030$$

A. 3

B. 5

C. 6

D. 7

27. What is the median value of 6, 7, 8, 1, 2, 4, 5, 5, 7, 8, 1, 2, and 9?

* Put the numbers in order

* Find the middle number

A. 4.5

B. 5

C. 4

D. 5.5

28. A ship from China is coming to the Port of Long Beach. The captain of the ship has 5,000 Yuan. How many US dollars does he have? The conversion rate at the time is 1 yuan to 0.8128 USD.

$$5,000 \text{ yuan} \left(\frac{0.8128}{1 \text{ yuan}} \right) = 4064$$

A. 4064 *USD*

B. 6151.57 *USD*

C. 4,064,000 *USD*

D. 615.64 *USD*

29.   Chris has €65 (Euros). He wants to purchase jeans for $45 CAD and a tee shirt for $20 CAD. After his purchase, how much money will he have left? The conversion rate at the time is 1euro to 1.57 CAD?
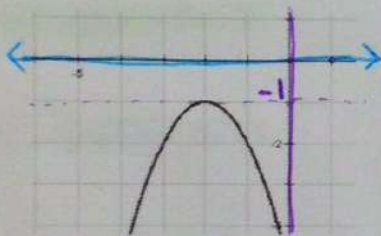
$$45\ CAD + 20\ CAD = 65\ CAD$$

$$65\ Euros \left(\frac{1.57\ CAD}{1\ Euro}\right) = 102.05\ CAD$$
$$- 65.00\ CAD$$
$$37.05\ CAD$$

$$37.05\ CAD \left(\frac{1\ Euro}{1.57\ CAD}\right) = 23.6\ Euros$$

A.   102.1 *Euros*

B.   37.1 *Euros*

C.   23.6 *Euros*

D.   *None of the Above*

30.   What is the domain and range of the given graph?
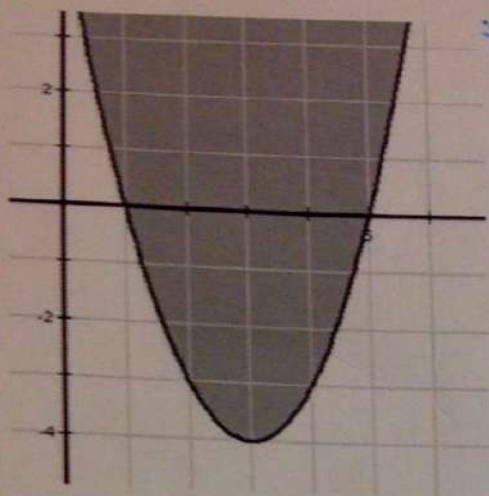

Domain: X
Range: y

A. Domain: all real numbers.
   Range: all real numbers

B. Domain: all real numbers
   Range: $y \leq -1$

C. Domain: $x \leq -2$
   Range: all real numbers

D. Domain: all real numbers
   Range: $y < 1$

31. Which inequality is represented by the graph?

Look at the graph

Solid Line means $\leq$ or $\geq$
    So B is NOT the answer

The Shading goes up that
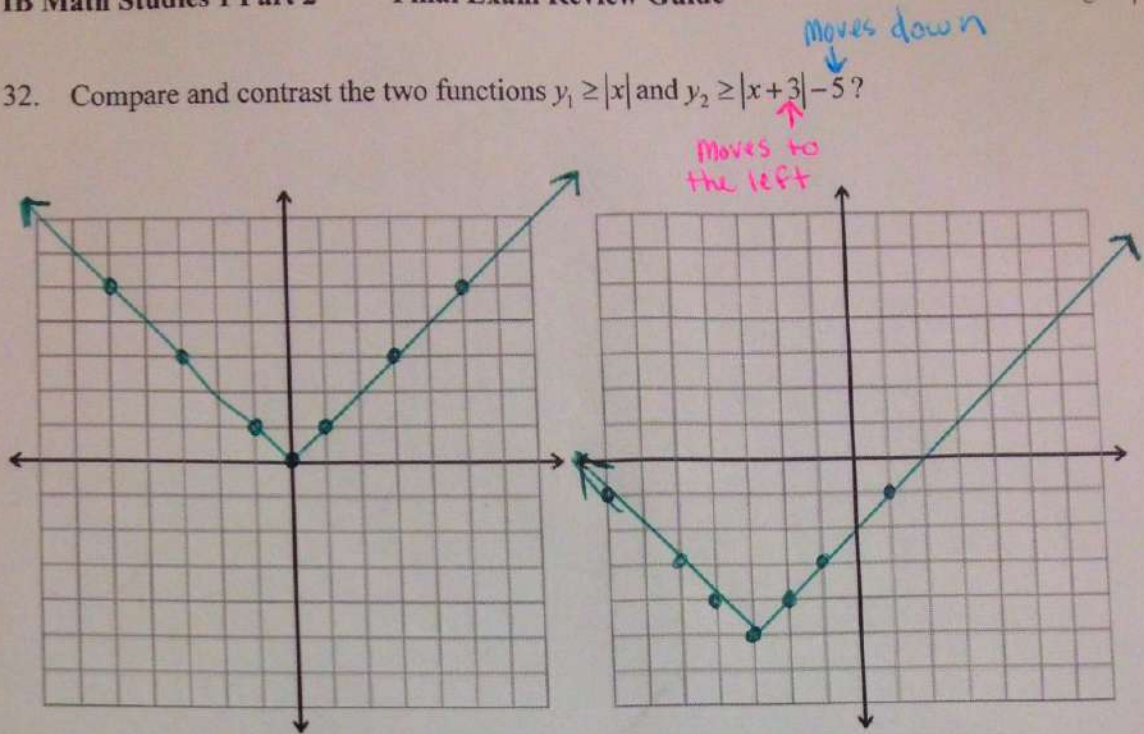   means $y \geq$

    So A & D are NOT the answer

A. $y \leq x^2 - 6x + 5$

B. $y < x^2 - 6x + 5$

C. $y \geq x^2 - 6x + 5$

D. $y \leq -x^2 - 6x + 5$

Moves down

32.   Compare and contrast the two functions $y_1 \geq |x|$ and $y_2 \geq |x+3|-5$?

Moves to the left

A.   Shifted 3 units to the left and 5 units down.

B.   Shifted 3 units to the right and 5 units down.

C.   Shifted 3 units to the right and 5 units up.

D.   Shifted 5 units to the right and 3 units down.

33.   What is the minimum point of the function $y = 3x^2 - 18x - 1$?

* Plug into graph

* Draw

* G-Solv (F5) | min (F3)

A. $(28, 3)$

B. $(-3, 80)$

C. $(-3, 28)$

D. $(3, -28)$

34. To expand $(x-3)^2$, which procedure would you follow?

    A. $(x \cdot x - 3 \cdot 3) = x^2 - 9$

    B. $(x-3)(x-3) = x^2 - 3x - 3x + 9$
       $= x^2 - 6x + 9$

    C. $3(x-3) = 3x - 9$

    D. $(-3x)^2 = 9x^2$

35. Given the quadratic function $f(x) = -2(x-4)^2 + 7$, what is the vertex of its graph?

    our x's line $y = 7$
    $x = +4$

    A. $(-2, -7)$

    B. $(2, 7)$

    C. $(4, 7)$

    D. $(-7, 6)$

36. Write the expression as a complex number in standard form. $\dfrac{8+3i}{4-2i} \cdot \dfrac{(4+2i)}{(4+2i)}$

    (Top) → $(8+3i)(4+2i)$ (Bottom) → $(4-2i)(4+2i)$

    $32 + 16i + 12i + 6i^2$ $16 + 8i - 8i - 4i^2$

    $32 + 28i + 6(i^2)$ $16 - 4(i^2)$

    $32 + 28i + 6(-1)$ $16 - 4(-1)$

    $32 + 28i - 6$ $16 + 4$

    $26 + 28i$ 20

    $\dfrac{26+28i}{20}$

    A. $\dfrac{-26-28i}{12}$

    B. $\dfrac{13+26i}{10}$

    C. $\dfrac{26-28i}{20}$
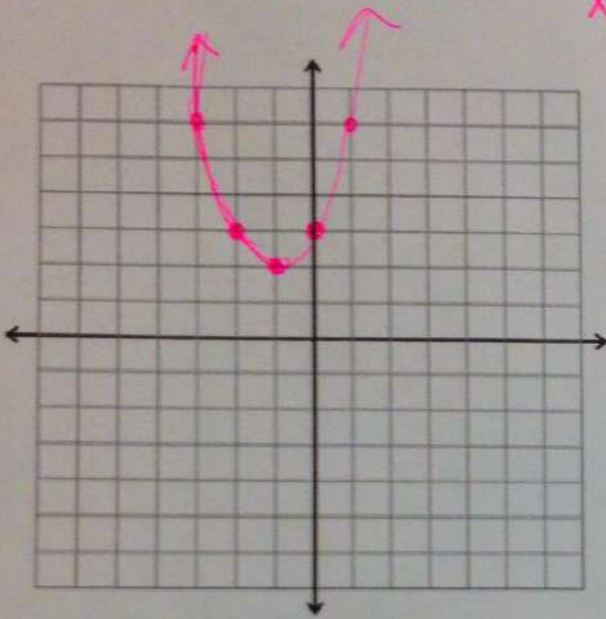
    D. $\dfrac{26+28i}{20}$

37. Write in standard form and graph $y = (x+1)^2 + 3$?

$$(x+1)(x+1) + 3$$

$$x^2 + x + x + 1 + 3$$

$$x^2 + 2x + 1 + 3$$

$$x^2 + 2x + 3$$

38. Using the quadratic formula, what are the solutions to the equation $5x^2 + 4x - 2 = 0$?

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\frac{-4 \pm \sqrt{4^2 - 4(5)(-2)}}{2(5)}$$

Do all the multiplication

$$\frac{-4 \pm \sqrt{16 + 40}}{10}$$

$$\frac{-4 \pm \sqrt{56}}{10}$$

$$\frac{-4 \pm 2\sqrt{14}}{10}$$

* Reduce by 2

$$\frac{-2 \pm \sqrt{14}}{5}$$

a   b   c
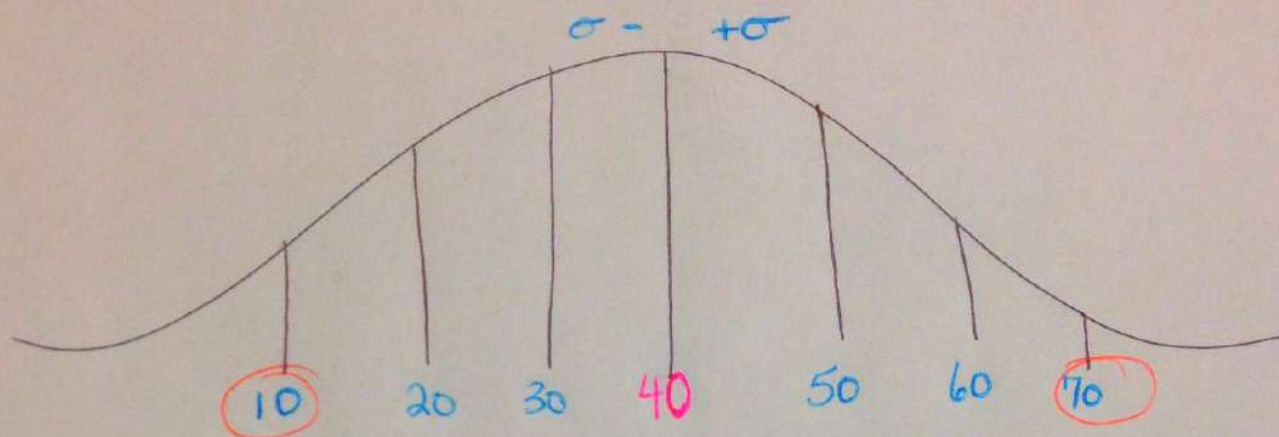
A. $\frac{5 \pm \sqrt{4}}{4}$

B. $\frac{4 \pm \sqrt{14}}{5}$

C. $\frac{-4 \pm \sqrt{-4}}{10}$

D. $\frac{-2 \pm \sqrt{14}}{5}$

39. If you were to draw a normal distribution graph with 3 standards deviations to the right and 3 standard deviations to the left. What would be the range of your data, if you have a mean=40 and standard deviation= 10?

$\sigma - \quad +\sigma$

$10 \quad 20 \quad 30 \quad 40 \quad 50 \quad 60 \quad 70$

A. 80

B. 60

C. 50

D. 30

$70 - 10 = 60$

40. School administrators collect data on students attending the school. Which of the following variables is quantitative?

    A. whether the student is in Honors classes

    B. whether the student has taken the ACT

    C. Student average attendance

    D. Demographics

41.   Here are some statistics for the annual Wildcat golf tournament:

Lowest score = 50, +10
Mean score = 93, +10
Median = 104, +10
Range = 80, *Stays the Same*
Inner Quartile Range = 105, *Stays the Same*
Q1 = 40, +10
Standard deviation = 19 *Stays the same*

Suppose it was very windy and all the golfers' scores went up by 10 strokes. Tell the new value for each of the summary statistics.

Lowest is now 60 "D" should be crossed out

The mean is now 103

The median is now 114

The range does not change "A" should be crossed out

Inner Quartile Range Stays the same "C" should be crossed out

A.   Lowest score: 60, mean: 103, median: 114, range: 80, IQR: 105, Q1: 50, SD: 19

B.   Lowest score: 60, mean: 103, median: 114, range: 70, IQR: 105, Q1: 46, SD: 19

C.   Lowest score: 60, mean: 103, median: 114, range: 70, IQR: 115, Q1: 46, SD: 19

D.   Lowest score: 67, mean: 97, median: 105, range: 83, IQR: 102, Q1: 50, SD: 29

42.   We collect these data from 50 male students. Which variable is categorical?

A. number of speeding tickets

B. hair color

C. number of shoes in their closet

D. hours of work last week