Unit 1 - Integers

NAME Key - 6th period DATE _____ PERIOD 6th

Standardized Test Practice

Read each question. Then fill in the correct answer on the answer document provided by your teacher or on a sheet of paper.

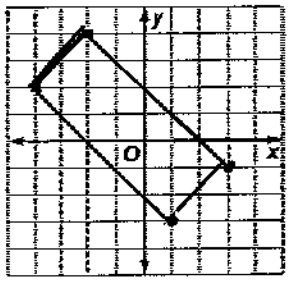
1. The table shows the daily low temperatures for Cleveland, Ohio, over five days.

Day	Temperature
1	15°F
2	−2°F
3	8°F
4	−6°F
5	5°F

Which expression can be used to find the average daily low temperature during the five days?

A. $(15 + 2 + 8 + 6 + 5) \div 5$
B. $15 + 2 + 8 + 6 + 5 \div 5$
C. $[15 + (-2) + 8 + (-6) + 5] \div 5$
D. $15 + (-2) + 8 + (-6) + 5 \div 5$

2. Three vertices of a parallelogram are given as coordinates (−4, 2), (−2, 4), and (1, −3) in the graph. Which coordinates best represent the location of the fourth vertex of the parallelogram?



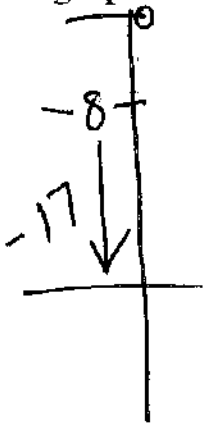
F. (−3, 1)
G. (3, −1)
H. (1, −3)
I. (−1, 3)

3. **GRIDDED RESPONSE** The lowest point in Japan is Hachiro-gata (elevation −4 m), and the highest point is Mount Fuji (elevation 3,776 m). What is the difference in elevation, in meters, between Mount Fuji and Hachiro-gata?

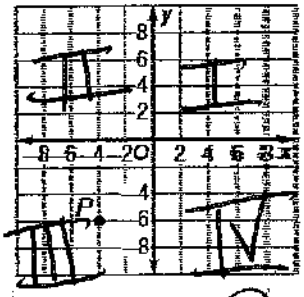
3776
−4

4. **GRIDDED RESPONSE** A submarine is cruising 8 meters below the surface. The captain orders a dive of another 17 meters. What is the new cruising depth of the submarine in meters?

25 ft below



5. In what quadrant is point *P* located?



A. Quadrant I
B. Quadrant II
C. Quadrant III
D. Quadrant IV

6. What integer added to −9 gives a sum of 3?

F. 12
G. 6
H. 3
I. −12

7. By the end of the third quarter of a football game, Ricky had gained 112 yards and had lost 12 yards. If Ricky lost an additional 8 yards and gained 22 yards in the fourth quarter, which equation could be used to represent his total yardage for the game?

A. $112 + 12 + 8 + 22 = 154$
B. $112 + (-12) + (-8) + 22 = 114$
C. $112 + 12 + (-8) + (-22) = 94$
D. $(-112) + (-12) + 8 + 22 = -94$

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8. **GRIDDED RESPONSE** Bobby is diving 50 feet below sea level at the beach. His sister is at the swimming pool deck, which is 15 feet above sea level. What is the difference, in feet, between the pool deck and Bobby's position?

65ft

9. **SHORT RESPONSE** Larry borrowed $12,000 from his grandfather to buy a car. He bought a used car, so he returned $4,411 to his grandfather. Write and solve an equation using integers that shows the total amount that Larry owes his grandfather.

12000 − 4411 = $7589

10. Pablo and three of his friends are playing paintball. The table shows their scores at the end of one round. By how many points is Winston beating Pablo?

Player	Score
Pablo	−189
Winston	−124
Nevin	130
Marsella	48

−189 − −124

65

F. 65
G. 135
H. 178
I. 313

11. Each of the first 4 pit stops a race car driver makes loses ten seconds off the leader. The pit crew makes adjustments, and at each of the next two pit stops he gains 7 seconds on the leader. How much time is the driver off the leader?

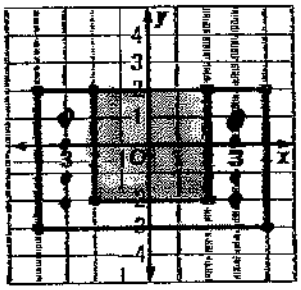
A. 40 seconds
B. 14 seconds
C. −26 seconds
D. −54 seconds

4 · −10 = −40

7 · 2 = 14

−26

12. **SHORT RESPONSE** A rectangle and a square are graphed on a coordinate plane. Name an ordered pair that is inside the rectangle but outside the square.



13. **EXTENDED RESPONSE** The use of computers to download music has decreased the sales of music CDs. Use the following table to answer the questions.

Year	Estimated Number of New Music CD Releases
2000	36,000
2001	32,000
2002	34,000
2003	8,000
2004	14,000
2005	10,000
2006	12,000

Part A During which year was there the greatest decrease in CD releases from the previous year? 2003
What was the decrease? 26,000

Part B Write and evaluate an expression that shows the change in CD releases from 2004 to 2005.

14000
− 10000
4000

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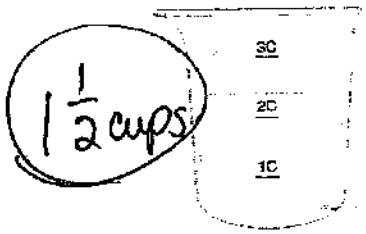
Standardized Test Practice

Read each question. Then fill in the correct answer on the answer sheet provided by your teacher or on a sheet of paper.

1. **SHORT RESPONSE** Mrs. Brown needs to make two different desserts for a party. The first recipe requires $2\frac{1}{4}$ cups of flour and the second recipe requires $\frac{3}{4}$ cup less than the first. Write an equation that can be used to find the number of cups of flour needed for the second recipe.



$1\frac{1}{2}$ cups

$2\frac{1}{4} - \frac{3}{4} =$

$\frac{9}{4} - \frac{3}{4} = \frac{6}{4}$

1

2. The fraction $\frac{5}{6}$ is found between which pair of fractions on a number line?

A. $\frac{1}{4}$ and $\frac{5}{8}$

B. $\frac{1}{3}$ and $\frac{4}{9}$

C. $\frac{11}{12}$ and $\frac{31}{36}$

D. $\frac{7}{12}$ and $\frac{17}{18}$

$\frac{33}{36}$ $\frac{30}{36}$ $\frac{31}{36}$

3. At 7 A.M., the temperature was 15°F below zero. By 2 P.M. the temperature rose 32°F and by 5 P.M. it dropped 10°F. What was the temperature at 5 P.M.?

F. 10°F

G. 9°F

H. 7°F

I. 11°F

$-15 + 32 - 10$

$32 - 25$

7 −11 −19 −30

4. **GRIDDED RESPONSE** A diver is swimming 11 meters below the surface. The diver sees a shark 19 meters below him. How many meters below the surface is the shark?

5. **GRIDDED RESPONSE** Maria had $240 in her savings account. The table shows the change in her account for four consecutive weeks.

Week	Change
1	Deposit of $25
2	Withdrawal of $45
3	Withdrawal of $10
4	Deposit of $60

240 +25 265 −45 220 −10 210 +60 270

How much money, in dollars, did Maria have in her account at the end of the four weeks?

6. The table shows the distance Kelly swam over a four-day period. What was the total distance, in miles, that Kelly swam?

Kelly's Swimming	
Day	**Distance (mi)**
Monday	1.5
Tuesday	$2\frac{3}{4}$
Wednesday	2.3
Thursday	$3\frac{1}{2}$

1.50 2.75 2.30 3.50

A. 10.5 miles 10.50

B. $10\frac{1}{4}$ Miles 10.25

C. $10\frac{1}{20}$ Miles

D. 9 miles 9

10.05 mi

$10\frac{5}{100} = \frac{1}{20}$

7. Which of the following gives the correct meaning of the expression $\frac{5}{8} \div \frac{1}{3}$?

F. $\frac{5}{8} \div \frac{1}{3} = \frac{5}{8} \times \frac{1}{3}$

G. $\frac{5}{8} \div \frac{1}{3} = \frac{5}{8} \times \frac{1}{3}$

H. $\frac{5}{8} \div \frac{1}{3} = \frac{5}{8} \times \frac{1}{3}$

I. $\frac{5}{8} \div \frac{1}{3} = \frac{5}{8} \times \frac{1}{3}$

$\frac{5}{8} \times \frac{3}{1}$

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8. The table shows the lowest temperature readings to the nearest degree recorded for four countries.

City	Temperature (°F)
Finland	–61°
France	–42°
India	–27°
United States	–80°

Which of the countries has the lowest recorded temperature?

A. Finland

B. India

C. France

D. United States

9. **GRIDDED RESPONSE** Nate had 25 action figures. He gave away 10 to his brother. He then got 3 new action figures as a gift. How many action figures does Nate have now?

18

10. Which expression represents the least value?

F. $678 \div \frac{1}{3} \times 3$

G. $678 + \frac{1}{3}$

H. $678 \times \frac{1}{3} \div 3$

I. $678 - \frac{1}{3}$

11. **GRIDDED RESPONSE** Jacob had $25 for back-to-school shopping. He bought a shirt for $15 and then returned a shirt he bought a week ago and got $20 in return. How much money in dollars does Jacob have now?

$30

12. **GRIDDED RESPONSE** Evan runs $2\frac{3}{8}$ miles each week. He runs $\frac{3}{4}$ mile on Mondays and $\frac{3}{4}$ mile on Tuesdays. How far does he run, in miles, on Thursday if it is the only other day he runs?

$2\frac{3}{8} - \frac{3}{4} - \frac{3}{4} =$ Thurs. $\frac{7}{8}$ miles

19/8 − 6/8

13. **SHORT RESPONSE** A recipe for a batch of cookies calls for $2\frac{1}{3}$ cups of flour for 24 cookies. Manuel wants to make 72 cookies. How many cups of flour will he need?

$\frac{2\frac{1}{3}\text{ cups}}{24\text{ cookies}} = \frac{7\text{ cups}}{72\text{ cookies}}$

14. **EXTENDED RESPONSE** A box of laundry detergent contains 35 cups. It takes $1\frac{1}{4}$ cups per load of laundry.

$1\frac{1}{4}$ c

Part A Write an equation to represent how many loads ℓ you can wash with one box.

$1\frac{1}{4}\ell = 35$

Part B How many loads can you wash with one box?

$\frac{35}{1} \div \frac{5}{4} = \frac{35}{1} \times \frac{4}{5} =$ 28

Part C How many loads can you wash with 3 boxes?

28 × 3

84

Unit 2 - Expressions

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Standardized Test Practice

Read each question. Then fill in the correct answer on the answer document provided by your teacher or on a sheet of paper.

1. What is $(3x - 2) - (4x + 1)$ in simplest form?

   A. $x - 3$
   B. $-x - 3$
   C. $-x + 1$
   D. $x + 1$

   $3x - 2 - 4x - 1$
   $-x - 3$

2. Roberto is training for the cross country team. The table shows the number of minutes he ran the first five days.

Day	Number of Minutes
Day 1	30
Day 2	30
Day 3	40
Day 4	40
Day 5	50

   If the pattern continues, which of the following shows the number of minutes he will run the next three days?

   F. 50, 50, 60
   G. 50, 60, 60
   H. 60, 60, 70
   I. 60, 70, 80

3. **GRIDDED RESPONSE** What is the value of the expression below if $x = 6$ and $y = 4$?

   $(x + y) + 5$

   15

4. Which of the following describes the relationship between the value of a term and n, its position in the sequence?

Position	1	2	3	4	5	n
Value of Term	3	6	9	12	15	

   A. Add 2 to n.
   B. Divide n by 3.
   C. Multiply n by 3.
   D. Subtract n from 2.

5. **GRIDDED RESPONSE** Parker baked 80 cookies for a bake sale. At the sale, 70% of his cookies sold. How many of Parker's cookies were sold?

   56

6. Which fraction is between $\frac{1}{2}$ and $\frac{3}{4}$?

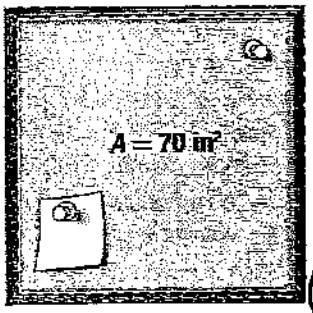
   F. $\frac{1}{4}$
   G. $\frac{1}{3}$
   H. $\frac{3}{5}$
   I. $\frac{7}{8}$

7. What is the first step in evaluating the expression $3 \times (5 + 4) - 27 \div 9$?

   A. multiplying 3 and 5
   B. adding 5 and 4
   C. subtracting 27
   D. dividing 27 and 9

8. **GRIDDED RESPONSE** A square-shaped bulletin board is shown.

   $\frac{15}{\text{of}} = \frac{\%}{100}$
   $\frac{x}{70} = \frac{65}{100}$

   What is 65% of 70?

   45.5 ft²

   If a teacher covers 35% of the board with papers, how many square feet will not be covered?

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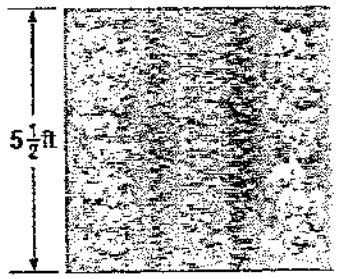
9. What is the perimeter of the square garden?



F. 5 feet
G. 20 feet
H. 22 feet
I. 30.25 feet

10. Sachi collects stamps. Each year, the number of stamps in her collection is ten times n, the number's position in the sequence. Which sequence represents Sachi's number of stamps?
A. 1, 11, 21, 31
B. 1, 10, 100, 1,000
C. 10, 11, 12, 13
D. 10, 20, 30, 40

11. What is the GCF of $45x^2y$ and $9x^3$?
F. 9
G. $9x$
H. $9x^2$
I. $9x^2$

12. **SHORT RESPONSE** Lemisha drove an average of 50 miles per hour on Sunday, 55 miles per hour on Monday, and 53 miles per hour on Tuesday. Let s represent the number of hours she drove on Sunday, m represent the number of hours she drove on Monday, and t represent the number of hours she drove on Tuesday. Write an expression that represents the total distance Lemisha drove.

13. Which of the following expressions can be written as $5(3 + x)$?
A. $x \cdot 5 + x \cdot 3$
B. $5 \cdot 3 + 5 \cdot x$
C. $5 \cdot 3 + x$
D. $3 + 5 \cdot x$

14. **SHORT RESPONSE** Use the Distributive Property to rewrite $4(12) + 4(8)$. Then evaluate the expression.

15. Which statement below is an example of the Associative Property of Addition?
F. $7 + (3 + 5) = 7 + (5 + 3)$
G. $9 + (11 + 6) = (9 + 11) + 6$
H. $3(6 + 5) = 3 \cdot 6 + 3 \cdot 5$
I. $12(8 + 4) = 12(8) + 12(4)$

16. **EXTENDED RESPONSE** The first and fifth terms of a sequence are shown.

Term 1

Term 5

Part A What might the third term look like?
Part B Describe the relationship between the term number and the sequence.
Part C Write a rule that connects the term number and the number of toothpicks in the sequence.

Unit 2 - Equations - Inequalities

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Standardized Test Practice

Read each question. Then fill in the correct answer on the answer sheet provided by your teacher or on a sheet of paper.

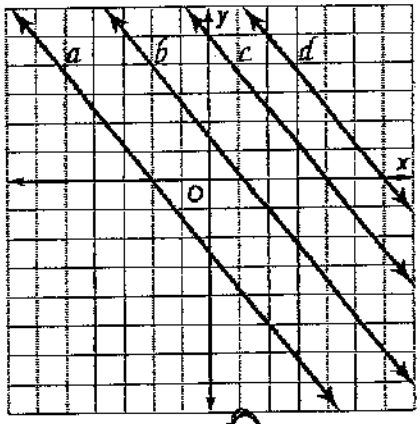
1. A sports store sells two different field hockey kits shown in the table.

Hockey Kits	
Beginner	**Basic**
hockey stick	hockey stick
ball	ball
shin guards	

The beginner's field hockey kit costs \$150. It is \$15 more than three times the cost of the basic kit. What is the cost of the basic kit?

A. \$35.00 C. \$45.00
B. \$40.00 D. \$50.00

2. Which line contains the ordered pair (–2, 4)?



F. line *a* H. line *b*
G. line *c* I. line *d*

3. Which integer added to 12 gives a sum of –14?

A. –18 C. –24
B. –20 D. –26

4. **GRIDDED RESPONSE** Mrs. McDowell is making a big batch of cookies for her son's birthday. The price of the chocolate chips is 2 bags for \$4.00. Use the table to determine the number of bags of chocolate chips r that Mrs. McDowell bought if the cost c was \$12.

r	$r(4 \div 2)$	c
1	$1(4 \div 2)$	\$2
2	$2(4 \div 2)$	\$4
3	$3(4 \div 2)$	\$6
6	$6(4 \div 2)$	\$12

5. **GRIDDED RESPONSE** Aida bought a costume box containing 50 costumes for \$300. She sold all of the costumes and made a \$250 profit. She sold all of the costumes for the same price. Use the equation $50c - 300 = 250$, where c is the selling price of each costume. What was the selling price of one costume in dollars?

$50c - 300 = 250$

\$11

$\frac{50c}{50} = \frac{550}{50}$

6. Which of the following problems can be solved using the equation $x - 9 = 15$?

F. Allison is 9 years younger than her sister Pam. Allison is 15 years old. What is x, Pam's age?

G. David's portion of the bill is \$9 more than Jaleel's portion of the bill. If Jaleel pays \$9, find x, the amount in dollars that David pays.

H. The sum of two numbers is 15. If one of the numbers is 9, what is x, the other number?

I. Calvin owns 15 CDs. If he gave 9 of them to a friend, what is x, the number of CDs he has left?

$x - 9 = 15$

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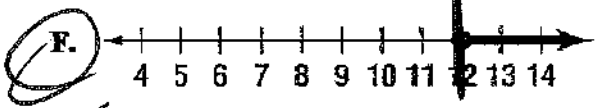
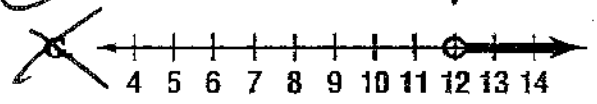
7. What value of x makes this equation true?

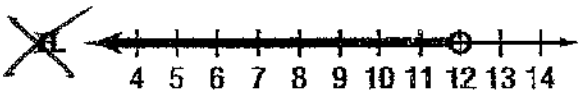
$$4x + 7 = 43$$

A. 12
B. 10
C. 9
D. 8

8. Joshua spends \$0.25 for every song he downloads to his cell phone. Which of the following represents the number of songs he can download if he has at least \$3?

F. 

G. 

H. 

I. Not enough information is given.

9. **SHORT RESPONSE** Rico, Carolina, and Gloria have pizza that they are going to be sharing with other people. Rico gave away $\frac{1}{3}$ of his cheese pizza to Carolina and she gave him $\frac{3}{7}$ of her pepperoni. Rico then gave Gloria $\frac{1}{7}$ of his cheese pizza. How much pizza, pepperoni and cheese, does Rico have now?

10. For a warm up, Samuel runs 200 yards less than half the maximum distance he can run. This is represented by the equation $r = \frac{1}{2}x - 200$, where x represents the maximum distance he can run and r represents the distance run during his warm up. If Samuel ran 1,600 yards during his warm up, what is the maximum distance he can run?

A. 3,600 yards
B. 2,400 yards
C. 1,800 yards
D. 1,600 yards

11. What is the value of $20 \div (-4)$?

F. -5
G. -7
H. 5
I. 4

12. **GRIDDED RESPONSE** Ines is in a hot air balloon 89 feet above the ground. A bird is flying 15 feet above the hot air balloon. How high off the ground is the bird in feet?

13. **EXTENDED RESPONSE** A first-time bungee jumper is about to make his first jump. When the bungee jumper jumps, he will fall 5 feet every 0.5 second.

Part A Let s be the total number of seconds in a jump and h be the height of the jump. Write an equation that can be used to find s.

Part B Use your equation to calculate the total seconds for a 150-foot jump. Show your work.

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Standardized Test Practice

Read each question. Then fill in the correct answer on the answer sheet provided by your teacher or on a sheet of paper.

1. Francesca typed 496 words in 8 minutes. Which of the following is a correct understanding of this rate?

   A. At this rate, it takes 62 minutes for Francesca to type one word.

   B. At this rate, Francesca can type 62 words in 8 minutes.

   C. At this rate, Francesca can type 62 words in one minute.

   D. At this rate, Francesca can type 8 words in one minute.

2. The table shows the prices of three boxes of real. Which box of cereal has the highest unit rice?

Cereal Box size (ounces)	Price($)
48	5.45
32	3.95
20	3.10

   F. the 20-ounce box

   G. the 32-ounce box

   H. the 48-ounce box

   I. All three boxes have the same unit price.

Price / 1 ounce 5.45 / 48

3. **GRIDDED RESPONSE** A bakery sells 6 bagels for 2.99 and 4 muffins for $3.29. What is the total cost in dollars of 4 dozen bagels and 16 muffins, not including tax?

$37.08

6 / 2.99 = 48 / ?

4. **SHORT RESPONSE** A teacher plans to buy 5 pencils for each student in her class. Pencils come in packages of 18 and cost $1.99 per package. What other information is needed to find the cost of the pencils?

How many students

5. During a 3-hour period, 2,292 people rode the roller coaster at an amusement park. Which proportion can be used to find x, the number of people who rode the coaster during a 12-hour period, if the rate is the same?

   A. $\frac{3}{2,292} = \frac{x}{12}$

   B. $\frac{3}{2,292} = \frac{12}{x}$

   C. $\frac{3}{x} = \frac{12}{2,292}$

   D. $\frac{x}{3} = \frac{12}{2,292}$

$\frac{3}{2292} = \frac{12}{x}$

$\frac{2292}{3} = \frac{x}{12}$

6. A family went on a vacation and used 5.4 gallons of gasoline to travel 150 miles. How many total gallons of gasoline will they need to travel 200 more miles?

   F. 12.6 gallons

   G. 13.1 gallons

   H. 14.3 gallons

   I. 16.2 gallons

7. **SHORT RESPONSE** You can drive your car 21.7 miles with one gallon of gasoline. At that rate, how many miles can you drive with 13.2 gallons of gasoline? 286.44 mi

8. The speed limit on a highway is 70 miles per hour. About how fast is this in miles per minute?

   A. 4,200 mi/min

   B. 11.7 mi/min

   C. 1.17 mi/min

   D. 0.117 mi/min

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9. What is the constant rate of change shown in the table?

Time (h)	Distance (mi)
0	0
1	5
2	10
3	15

F. $\frac{5 \text{ mi}}{1 \text{ h}}$ H. $\frac{10 \text{ mi}}{1 \text{ h}}$

G. $\frac{1 \text{ mi}}{5 \text{ h}}$ I $\frac{1 \text{ h}}{2 \text{ mi}}$

10. **SHORT RESPONSE** At 10 A.M., the temperature was 71°F. At 3 P.M., the temperature was 86°F. Find the value of the slope and explain what it means.

$\frac{5 \text{hR}}{15^\circ} = \frac{1 \text{hR}}{3^\circ}$

11. Which of the following relationships represent a direct variation?

A.

Hours, x	1	2	3	4
Wages ($), y	20	30	40	50

B.

Hours, x	1	2	3	4
Wages ($), y	5	12	19	26

C.

Hours, x	1	2	3	4
Wages ($), y	6	12	18	24

D.

Hours, x	1	2	3	4
Wages ($), y	15	20	25	30

12. To make a punch, Anna adds 8 ounces of apple juice for every 4 ounces of orange juice. If she uses 32 ounces of apple juice, which proportion can she use to find the number of ounces of orange juice x she should add to make the punch?

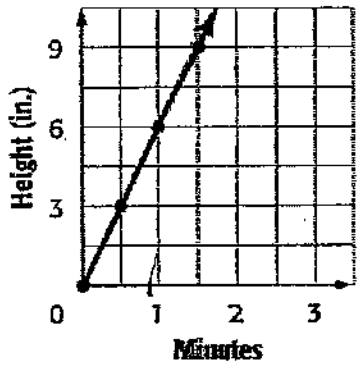
F. $\frac{8}{4} = \frac{x}{32}$ H. $\frac{4}{32} = \frac{x}{8}$

G. $\frac{8}{4} = \frac{32}{x}$ I. $\frac{8}{32} = \frac{x}{4}$

13. **SHORT RESPONSE** A dinner is served at an athletic booster fundraiser. The constant relationship between the number of people served at dinner n and the number of ounces of beef used b is shown n the table below. How many people were served if 760 ounces of beef were used?

n	5	20	150	? 190
b	20	80	600	760

14. **EXTENDED RESPONSE** The height of the water in a bathtub is shown in the graph.



Part A Find the rate of change in inches per minute. $\frac{6}{1}$

Part B Explain what the points (0, 0) and (1, 6) represent.

Unit 4 – Statistics

NAME Answer Key DATE PERIOD

Standardized Test Practice

Read each question. Then fill in the correct answer on the answer sheet provided by your teacher or on a sheet of paper.

1. Which of the following samples would be most representative of the entire student population?

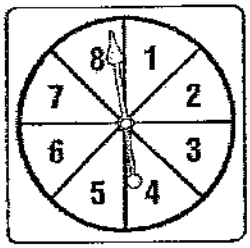
   A. surveying every boy in a gym class

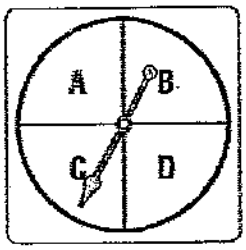
   B. surveying every girl in an art class

   C. surveying every teacher

   D. surveying every 3rd student who enters the school

2. Each spinner is spun once.





What is the probability of spinning the number 3 and the letter A?

F. $\frac{3}{8}$

G. $\frac{1}{4}$

H. $\frac{1}{8}$

I. $\frac{1}{32}$

$\frac{1}{8} \times \frac{1}{4} = \frac{1}{32}$ and

3. Which of the following equations is equivalent to the equation shown below?

$3x + 5 = 7x - 10$

A. $10x + 5 = -10$

B. $4x + 5 = -10$

C. $7x - 5 = 3x$

D. $-4x + 5 = -10$

$-4x + 5 = -10$

$3x + 5 = 7x - 10$

$-7x \quad -7x$

$-4x + 5 = -10$

4. **GRIDDED RESPONSE** Neela has 11.5 yards of fabric. She will use 20% of the fabric to make a flag. How many yards of fabric will she use?

11.5 × .2 = 2.30

What is 20% of 11.5?

.2 × 11.5

2.3 yards

5. **GRIDDED RESPONSE** A patio blueprint has a key that shows 1 inch is equal to 12 feet. If the owner wants the length to be 30 feet, how many inches will the length be on the blueprint?

$\frac{1 \text{ in}}{12 \text{ ft}} = \frac{x}{30 \text{ ft}}$ $12x = 30$ $\frac{12x}{12} = \frac{30}{12} = 2\frac{1}{2}$ in

6. The number of ringtones that twelve middle school students have on their cell phones is 14, 8, 7, 6, 5, 5, 10, 11, 8, 8, 6, and 7. Which of the following statements is NOT supported by these data?

   F. Half of the ringtones are below 7.5 and half are above 7.5.

   G. The range of the data is 9 ringtones.

   H. An outlier of the data is 11 ringtones.

   I. About one fourth of the ringtones that the students have are at or above 9.

7.5

5 5 6 6 7 7 8 8 10 11 14

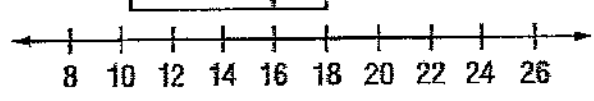
7. Which box plot represents the data set 8, 12, 21, 15, 20, 9, 16, 14, and 25?

8, 9, 12, 14, 15, 16, 20, 21, 25

20.5

10.5

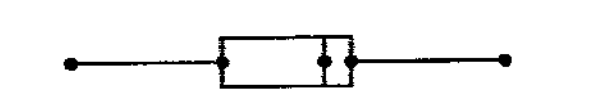
A.



B.

C.

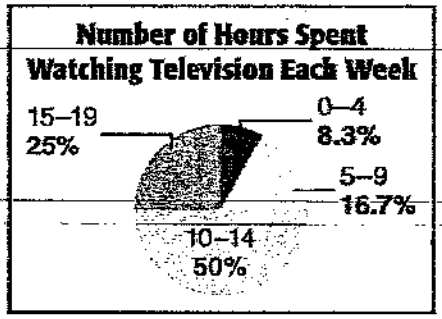
D.



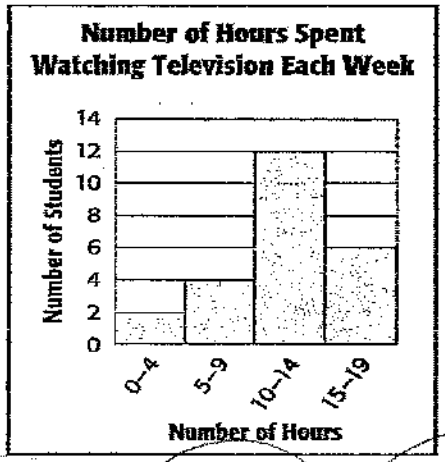
NAME _____ DATE _____ PERIOD _____

8. Katherine polled 21 classmates to find out the average number of hours each spends watching television each week. Which of the following displays would be most appropriate to show the individual student responses?

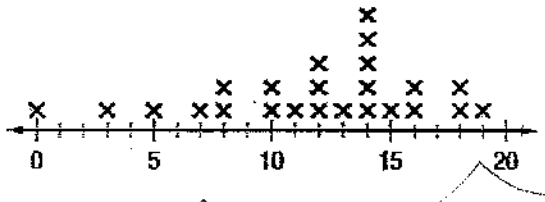
F.



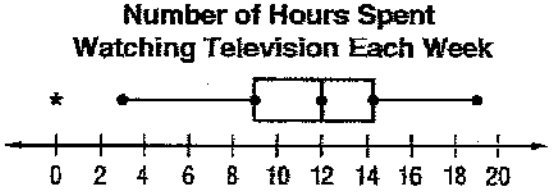
G.



H. Number of Hours Spent Watching Television Each Week



I.



9. The numbers of monthly minutes Gary used on his cell phone for the last eight months are shown below.

Monthly Cell Minutes			
400	550	450	620
550	600	475	425

What is the mode of this data?

A. 550 minutes

B. 450 minutes

C. 475 minutes

D. 400 minutes

10. **SHORT RESPONSE** Mr. Thompson made 20 liters of punch for a party. The punch contained 5 liters of orange juice. Write and solve a proportion to find the percent of orange juice in the punch.

5 is what % of 20?

$\frac{5}{20} = \frac{x}{100}$ 25%

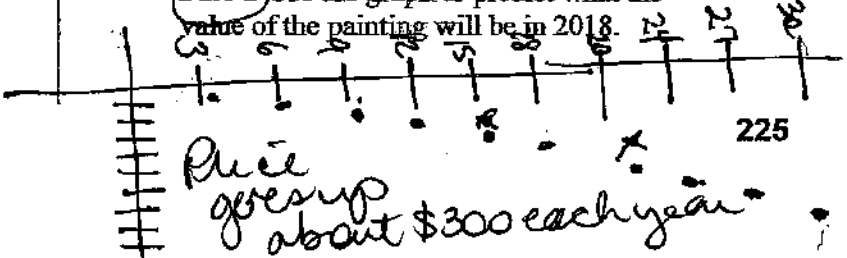
11. **EXTENDED RESPONSE** The table shows how values of a painting increased over ten years.

Year	Value	Year	Value
2005	$350	2010	$1,851
2006	$650	2011	$2,151
2007	$950	2012	$2,451
2008	$1200	2013	$2,752
2009	$1551	2014	$3,052

Part A Select and create a display that shows the relationship between years and the value of the painting. Justify your reasoning.

Part B Write a conclusion based on your graph. $4250

Part C Use the graph to predict what the value of the painting will be in 2018.



Unit 5 – Circles / 3-D Figures

NAME _____ DATE _____ PERIOD _____

Standardized Test Practice

Read each question. Then fill in the correct answer on the answer sheet provided by your teacher or on a sheet of paper.

1. A metal toolbox has a length of 11 inches, a width of 5 inches, and a height of 6 inches. What is the volume of the toolbox?

A. 22 in^3
B. 121 in^3
C. 210 in^3
D. 330 in^3

$V = l \times w \times h$
$V = 11 \times 5 \times 6$
$V = 11 \times 30$
$V = 330 in^3$

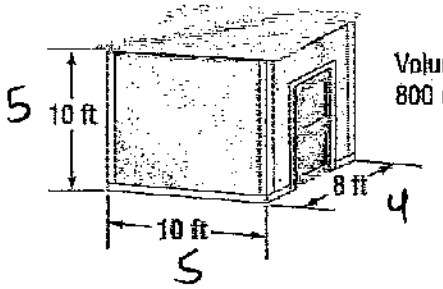
2. Evelyn has 3 apples to serve to her friends.

If Evelyn serves each friend $\frac{1}{3}$ of a whole apple, how many friends can she serve?

F. 1
G. 3
H. 9
I. 12

3. **GRIDDED RESPONSE** Daniel is designing and building a small storage shed. He wants the dimensions of the shed to be one half the dimensions of the shed shown below.

Storage Shed



Volume = 800 cubic feet

If the dimensions of the shed above are each divided in half, the volume of Daniel's new storage shed will be what fraction of the volume of the original storage shed?

$V = 5 \times 5 \times 4$
$V = 25 \times 4$
$V = 100$ $\frac{100}{800}$

$\frac{1}{8}$

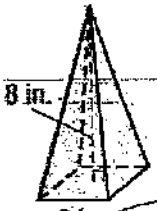
4. **GRIDDED RESPONSE** Timea ran 3 miles in 19 minutes. At this rate, how many minutes would it take her to run 5 miles?

$3\frac{2}{3}$ min

$\frac{3x=3}{19} = \frac{5}{x}$ 95

$3x = 95$
$x = 31\frac{2}{3}$
$31\frac{2}{3}$ min

5. Wilma made a decorative piece shaped like a square pyramid with the dimensions shown.



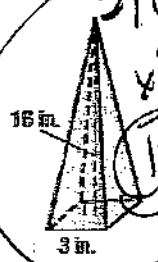
She wants to double the volume of the piece. Which of the following square pyramid pieces will have a volume that is twice the volume of Wilma's decorative piece?

72 in^3

A.

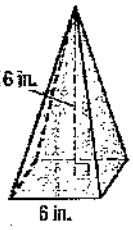
$4 \times 6 \times 8 = 288 in^3$

B.

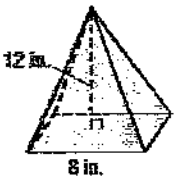


$5 \times 6 \times 9 = 144 in^3$

C.



D.



6. A wallet-sized print is about 5 centimeters wide and 8 centimeters long. Grace wants to use the wallet-sized print to make a print that is similar to the wallet-sized print. If the new print will be 20 centimeters long, how wide will the new print be to the nearest centimeter?

F. 11 centimeters
G. 12 centimeters
H. 13 centimeters
I. 15 centimeters

$\frac{w}{8} = \frac{5}{20}$ $\frac{l}{8} = \frac{x}{20}$ $8x$

$\frac{8x}{8} = \frac{100}{8}$

12.5

8 | 100
-8
20
-16
4

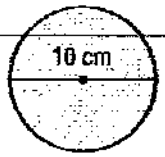
NAME _____ DATE _____ PERIOD _____

$b - 5 = -8$
$+5 \quad +5$
$b = -3$

7. **GRIDDED RESPONSE** Solve the equation $b - 5 = -8$. What is the value of b?

-3

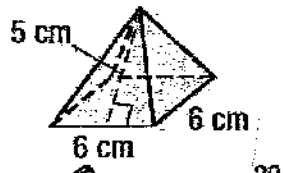
8. What is the area of the circle shown below?



$A = \pi r^2$
$A = 3.14 \times 5^2$
$A = 3.14 \times 25$

A. 314 cm^2
B. 78.5 cm^2
C. 15.7 cm^3
D. 3.14 cm^2

9. **SHORT RESPONSE** Compare the surface area of the figures. Justify your answer.



36
15
15
15
15
60

96 cm^2

9
30
30
30
30

129 cm^2

10. The circumference of a circle is 37.68 meters. What is the radius of the circle?

F. 12 m
G. 10 m
H. 6 m
I. 3.14 m

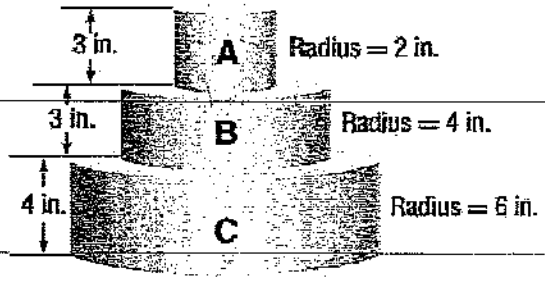
$C = \pi d$
$37.68 = 3.14 d$
$12 = d$
$6 = r$

11. **SHORT RESPONSE** Sophie drew a circle on a map with a radius of 2 inches. She plans to visit the cities within the circle. What is the area of the map that she wants to visit?

$A = \pi r^2$
$A = 3.14 \times 2^2$
$A = 12.56 in^2$

2
1
3.14
x 4
12.56

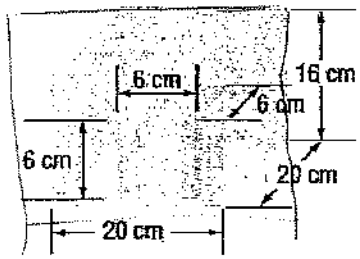
12. Andrea made a tiered cake for a wedding. She wants to cover the outside of each layer marked A, B, and C with white icing.



What is the circumference of cake A?
A. 3.14 in.
B. 12.56 in.
C. 25.12 in.
D. 37.68 in.

$C = \pi d$
$C = 3.14 \times 4$

13. **EXTENDED RESPONSE** A ceramic dish company makes small square dishes with lids. The dishes are shipped in rectangular boxes that are 20 centimeters by 20 centimeters by 16 centimeters. The extra space in the box is filled with packing material to protect the dish.



Part A How much space does the dish take up?

Part B How much packing material is needed?

Part C How much material is needed to make the box?

16
400
6400

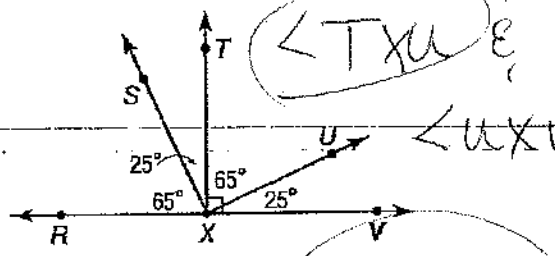
Unit 5 – Angles / Cross Sections

NAME _____ DATE _____ PERIOD _____

Standardized Test Practice

Read each question. Then fill in the correct answer on the answer document provided by your teacher or on a sheet of paper.

1. Which of the following two angles are complementary?



A. $\angle RXS$ and $\angle TXU$
B. $\angle SXT$ and $\angle TXU$
C. $\angle RXS$ and $\angle SXV$
D. $\angle SXR$ and $\angle UXV$

2. A recipe calls for $2\frac{1}{3}$ packages of pudding. How many batches can be made if 20 packages of pudding are available?

F. 8 batches
G. 9 batches
H. 10 batches
I. 11 batches

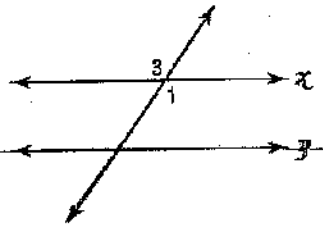
3. **GRIDDED RESPONSE** Greta packs tomatoes in boxes that weigh 1.4 kilograms when empty. The average tomato weighs 0.2 kilogram, and the total weight of a box filled with tomatoes is 11 kilograms. How many tomatoes are packed in each box?

4. What is the solution of the inequality below?

$$4n - 8 \leq 40$$

A. $n \leq 8$
B. $n \leq 12$
C. $n \geq 8$
D. $n \geq 12$

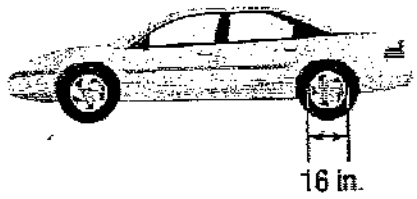
5. In the figure below, line x is parallel to line y.



What type of angles are $\angle 1$ and $\angle 3$?

F. vertical angles
G. adjacent angles
H. right angles
I. regular angles

6. Thom has a scale model of his car. The scale is 1 : 12. If the actual car has 16-inch wheels, what size are the wheels on the scale model?



A. 1 $\frac{1}{3}$ in.
B. 2 in.
C. 32 in.
D. 40 in.

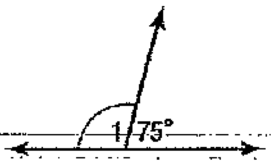
7. **SHORT RESPONSE** In triangle ABC, $m\angle A = 55°$ and $m\angle B = 35°$. Classify the triangle by its angles.

8. A stained glass window is in the shape of an equilateral triangle. What is the measure of one interior angle of the triangle?

F. 30°
G. 60°
H. 90°
I. 180°

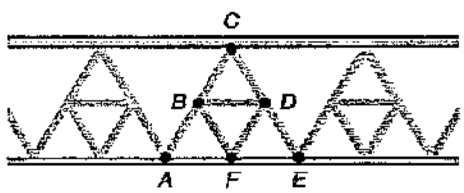
9. **SHORT RESPONSE** In $\_FGH$, $m\angle G = 30°$ and $m\angle H = 100°$. What is the measure of $\angle F$?

10. What is the measure of $\angle 1$ in the figure?



A. 15°
B. 25°
C. 100°
D. 105°

11. The bridge structure is supported by the triangular braces as shown.



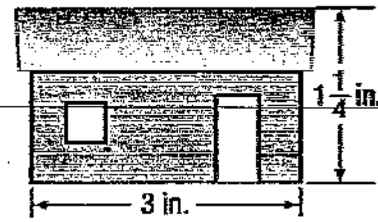
Triangles *ACE* and *ABF* are similar triangles. The scale factor is 0.5. If *CE* = 10 feet, what is the length of *BF*?

F. 2.5 ft
G. 5 ft
H. 6 ft
I. 12 ft

12. Jesse purchased a new digital camera for $499 and a printer for $299 including tax. He plans to pay the total amount in 6 equal monthly payments. What is a reasonable estimate of the amount he will pay each month?

A. $66.50
B. $133.00
C. $155.00
D. $165.00

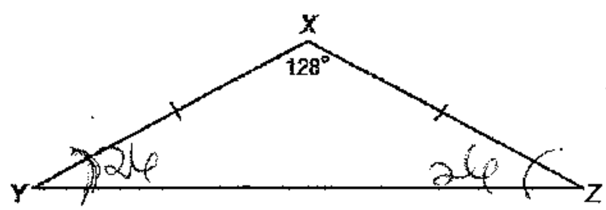
13. An architect created the scale drawing below showing a wall of a child's playhouse.



Which of these was the scale used for the drawing if the actual height of the wall is $7\frac{1}{2}$ feet?

F. 1 in. = 1 ft
G. $\frac{1}{2}$ in. = 1 ft
H. 2 in. = 12 ft
I. $\frac{1}{4}$ in. = 1 ft

14. **EXTENDED RESPONSE** Use triangle *XYZ* to answer the following questions.



Part A Classify angle *X*.

Part B Classify angle *Y*.

Part C Classify the triangle by its sides and by its angles.

Part D If $\angle Y$ is congruent to $\angle Z$, find the measure of $\angle Z$. Explain.

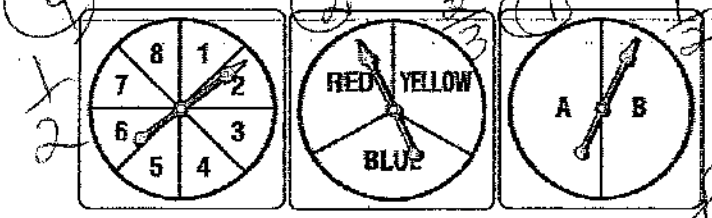
Unit 6 – Probability

NAME _____ DATE _____ PERIOD _____

Standardized Test Practice

Read each question. Then fill in the correct answer on the answer sheet provided by your teacher or on a sheet of paper.

1. Jessica played a game where she spun each of the spinners shown below once. If she spins an even number on Spinner 1, red or yellow on Spinner 2, and a B on Spinner 3, how many possible unique outcomes are there? outcomes are there?



Spinner 1 Spinner 2 Spinner 3

A. 4 C. 10

B. 8 D. 16

2. What is $4 \div \frac{1}{3}$?

F. $\frac{1}{12}$ H. 7

G. $\frac{4}{3}$ I. 12

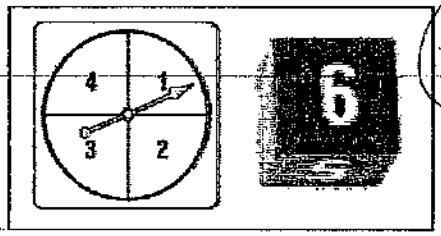
3. The students in Mrs. Martin's class sell items to raise money for field trips each year. They took a survey to determine which items to sell to other students. The results of the survey are shown in the table. Based on the survey results, what is the probability that a student, selected at random, would buy a drink?

Item	Number of Votes
rings	62
bracelets	27
earrings	21
Trading cards	49
snacks	111
small toys	30

A. $\frac{1}{5}$ C. $\frac{1}{2}$

B. $\frac{1}{4}$ D. $\frac{1}{3}$

4. **GRIDDED RESPONSE** Stacy has a spinner and a number cube similar to the ones below. After spinning and rolling the number cube, she will add the two numbers.

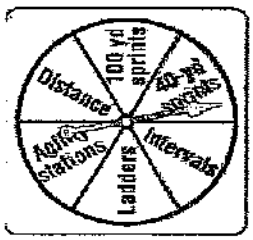


What is the probability that the sum of the numbers from the spinner and number cube will be 3 or 4?

5. **GRIDDED RESPONSE** The table shows the total distance traveled by a boat traveling at a constant rate of speed. Based on this information, what will be the distance traveled in miles after 8 hours?

Time (h)	Distance (mi)
2	90
2.5	112.5
3	135
4	180

6. Coach Castillo wanted his team to do a variety of running exercises for practice. To make it more interesting, he used the spinner below to determine which running exercise the team would perform.



What is the theoretical probability of landing on 40-yard sprints?

F. $\frac{1}{8}$

G. $\frac{1}{6}$

H. $\frac{1}{5}$

I. $\frac{1}{4}$

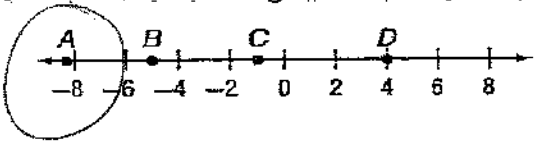
NAME _____ DATE _____ PERIOD _____

7. Douglas paid $21 for a pair of jeans at the mall. They were on sale for 20% off. What was the original price before the discount?

A. $4.20
B. $5.25
C. $26.25
D. $105.00

What 21 is 80% of what #?
21 = 80
x 100
80x = 2100
80 80

8. **SHORT RESPONSE** Which point has a coordinate with the greatest absolute value?



9. A cell phone company charges $35 a month plus $0.30 per text message. Which expression could be used to find the cost for one month of service with b text messages?

F. $35 + 0.30b$
G. $35b + 0.30$
H. $35.30b$
I. $35b + 0.30b$

10. **SHORT RESPONSE** Corri needs to get milk (M), eggs (E), bread (B), and cereal (C) at the store. Since the bread is close to the cereal, Corri always picks up the cereal right after getting bread. List all of the different combinations of ways she can pick up the items she needs. Use the first letter of each item in your list (M, E, B, C).

BC ME meBC mBCE
BCEM EmBC EBCM

11. Sierra has 11.5 yards of fabric. She will use 20% of the fabric to make a flag. How many yards of fabric will she use?

A. 9.2 yd
B. 8.6 yd
C. 4.5 yd
D. 2.3 yd

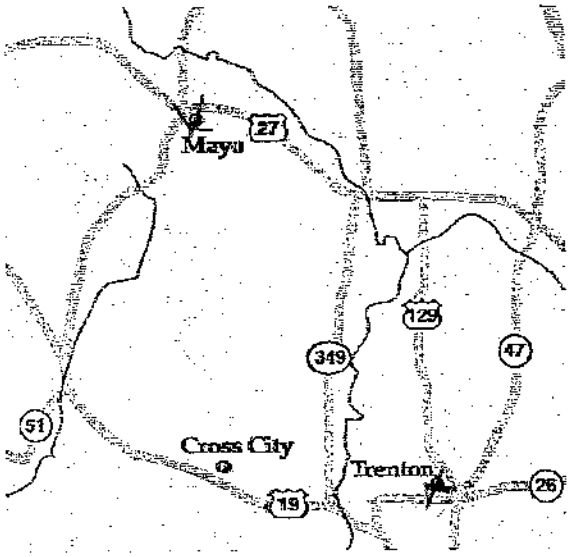
What is 20% of 1.5?
1.5
x .2

12. Juan rolled a number cube labeled one through six four times. Each time, the number 3 appeared. If Juan rolls the number cube one more time, what is the probability that 3 will appear?

F. less than $\frac{1}{6}$
G. $\frac{1}{6}$
H. greater than $\frac{1}{6}$
I. not enough information

It will always be the same probability.

13. **EXTENDED RESPONSE** Molly will travel from Trenton to Mayo by car. Suppose she leaves Trenton on one of three routes: 47 North, 129 North, or 26 West, and arrives in Mayo via either 51 North or 27 West. She does not retrace her steps.



4

Part A Based on the map, how many different routes could Molly take for her journey? Create a table, list, or tree diagram to show the possibilities.

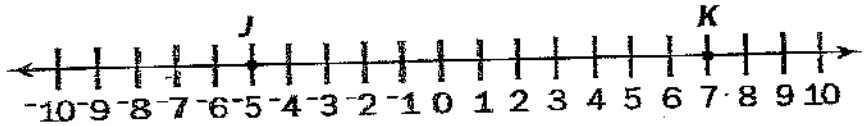
3/4

Part B If Molly chooses one route at random, what is the probability she will drive on US 27?

129 → 27 → Mayo
47 → 27 → mayo
26 → 19 → 349 → 27 → mayo
26 → 19 → 51 → Mayo

Item 1 Key

John and Kamira are playing a game. John's score (J) and Kamira's score (K) after round 1 are shown on the number line.



The score recorded at the end of the first round is 2. What could this score represent?

A. The sum of John's score and Kamira's score.
B. The difference between John's score and Kamira's score.
C. The absolute value of the difference of John's score and Kamira's score.
D. The sum of the absolute value of John's score and the absolute value of Kamira's score.

Item 2

What is the value of $4.2(46 - 65)$?

$4.2(-19)$

A. −798
B. −79.8
C. 79.8
D. 798

Item 3

What is the product?

$-8(7 - 3.2)$ $-8(3.8)$

A. −59.2
B. −30.4
C. 30.4
D. 52.8

Item 4

$40 + 4 = -160$
-156
-316
$+375$
$+59$

During one week, Sheila made several changes to her bank account. She made four withdrawals of $40 each from an ATM. She also used her check card for a $156 purchase. Then she deposited her paycheck of $375.

By how much did the amount in her bank account change during that week?

A. $59 increase
B. $59 decrease
C. $691 increase
D. $691 decrease

Item 5

Consider the expression $6r - r + 8(15 - r) + 23 - 6$.

$6r - r + 8(15 - r) + 23 - 6$
$5r + 120 - 8r + 17$
$-3r + 137$

Part A: Is $-3r + 137$ equivalent to the given expression?

Yes!

Part B: Explain how you determined whether the expressions are or are not equivalent.

Item 6

Which expression is equivalent to $-7(y - 2)$?

A. $-7y - 2$
B. $-7y + 2$
C. $-7y - 14$
D. $-7y + 14$

$-7y + 14$

Item 7

Julie works Sunday, Monday, and Wednesday for 10 hours each day. On Tuesday, Thursday, and Friday, she works 7 hours each day. She does not work on Saturday. Her weekly total earnings are $612.

Part A: What is her hourly rate of pay?

$10(3) + 7(3) = 612$
$51R = 612$
$R = \$12$

$12.00

Part B: Julie's manager proposes a new pay rate. The manager says Julie can get paid twice her hourly rate for working any hours over 8 in a day. What would be her weekly earnings using this method of payment? Explain how you found her total earnings using this method.

$ 684

Best option

$12(\text{Reg hours}) + 24(\text{overtime hours}) = x$
$12[3(8) + 3(7)] + 24(6) = x$
$12(24 + 21) + 144 = x$
$12(45) + 144 = x$
$540 + 144 = 684$

Part C: Julie thinks she can earn more money if she is paid $1\frac{1}{2}$ times her hourly rate for any hours over 40 in her weekly total. Which method of payment, Julie's or her manager's, would give Julie higher weekly earnings? Explain your reasoning.

$1\frac{1}{2} \times 12 = \$18$
$10(3) + 7(3)$
$30 + 21 = 51$ hrs total

$\$12(\text{normal 40 hours}) + \$18(\text{over 40 hr}) = x$
$12(40) + 18(11) = x$
$480 + 198 = \$678$

Item 8

The sum of a number, n, and 8 is multiplied by -4, and the result is -12.

What is the number?

A. $n = -5$
B. $n = 1$
C. $n = 5$
D. $n = 11$

$-4(n+8) = -12$

$-4n - 32 = -12$

$+32 \quad +32$

$-4n = 20$

$n = -5$

Item 9

The average rate of hair growth is 2.5 centimeters every 2 months.

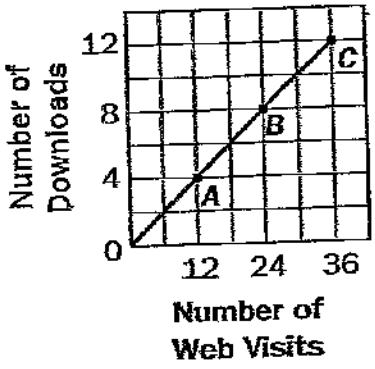
At that rate, how many months will it take to grow 22.5 centimeters of hair?

A. 9 months
B. $11\frac{1}{4}$ months
C. 18 months
D. $28\frac{1}{8}$ months

$2.5 \overline{)22.5}$ $\quad 9$

Item 10

Consider the graph.



What does point A represent on this graph?

A. When there are 12 web visits, there are 4 downloads.
B. When there are 12 downloads, there are 4 web visits.
C. As the number of web visits increases by 12, the number of downloads decreases by 4.
D. As the number of web visits decreases by 12, the number of downloads increases by 4.

Item 11

During cooking, chicken loses 10% of its weight due to water loss. In order to obtain 1,170 grams of cooked chicken, how many grams of uncooked chicken must be used?

A. 1,053 grams
B. 1,287 grams
C. 1,300 grams
D. 1,340 grams

1170 is 90% of what #?

$\frac{1170}{x} = \frac{90}{100}$ $\quad \frac{90x}{90} = \frac{117000}{90}$ $\quad x = 1300$

Item 12

A satellite is 18 meters wide. A model of it was built with a scale of 1 centimeter : 3 meters. How wide is the model?

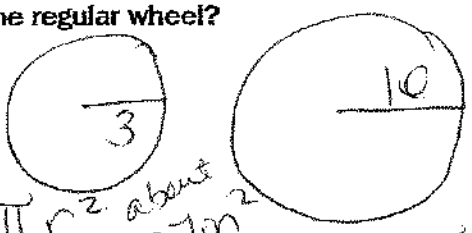
A. 6 meters
B. 6 centimeters
C. 54 meters
D. 54 centimeters

$\frac{1\text{ cm}}{3\text{m}} = \frac{6\text{ cm}}{18\text{m}}$ $\times 6$

Item 13

A bicycle training wheel has a radius of 3 inches. The bicycle wheel has a radius of 10 inches. Approximately how much smaller, in square inches, is the area of the training wheel than the area of the regular wheel?

A. 21.98 in^2
B. 153.86 in^2
C. 285.74 in^2
D. 1,142.96 in^2



$A = \pi r^2$ about 27 in^2
$A = \pi \cdot 3^2$
$A = \pi \cdot 9$

$A = \pi r^2$
$A = \pi \cdot 10^2$ about 300 in^2
$A = \pi \cdot 100$

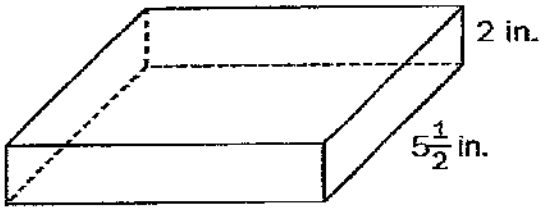
Item 14

Lequan is giving a book as a gift. She will put the book in a box and wrap it. Both the book and box are shaped like rectangular prisms with the dimensions shown in the diagrams.

$V = 8 \times 5 \times 1.5$
$V = 60\text{ in}^3$

$V = 10 \times 2 \times 5.5$
$V = 110\text{ in}^3$

8 in.
Book



10 in.
Empty Box

$110 - 60 = 50$

Part A: How much empty space will be in the box after Lequan puts the book inside it?

50 cubic inches

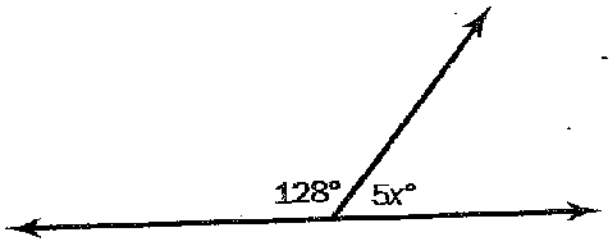
Part B: What is the minimum amount of wrapping paper needed to completely cover the outside of the box?

172 square inches

$2 \times 5.5 + 10 \times 5.5 + 10 \times 2$
$11 + 55 + 20 = 86\,(2)$

Item 15

Consider the diagram of supplementary angles.



What is the value of x?

$5x + 128 = 180$
$-128 \quad -128$
$5x = 52$
$x = 10.4$

A. 10.4
B. 52
C. 61.6
D. 92

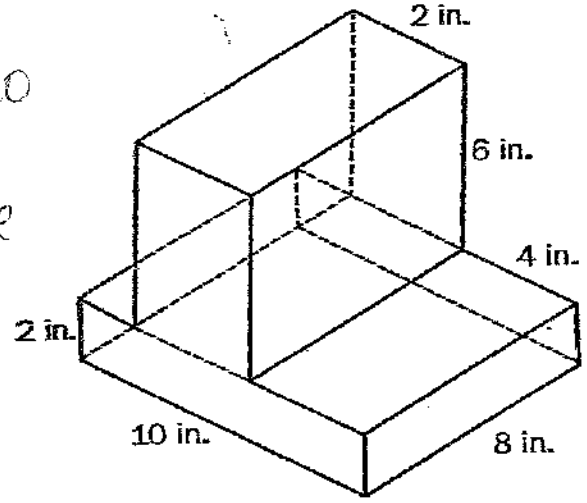
Item 16

Consider the figure composed of two rectangular prisms.

$2 \times 10 \times 8 = 160$

$8 \times 6 \times 2 = 96$

$256 in^3$



What is the volume of this figure?

A. 32 in^3
B. 256 in^3
C. 416 in^3
D. 7,680 in^3

Item 17

A gym teacher at Jackson High School wants the school to have a new team sport: soccer, lacrosse, or rugby. She will take a survey to determine which of those sports most students prefer. Which population would provide a random sampling for the gym teacher to use?

A. all students at the school who are sixteen years old
B. all students who buy lunch at the school on Friday
C. half of the students who play on team sports at the school
D. every third student arriving at school

Item 18

Listed below are the quiz scores for randomly selected students in two seventh-grade classes.

82.3

Class A: 99, 75, 84, 70, 86, 80 — 70, 75, 80, 84, 86, 99

85.3

Class B: 85, 83, 87, 90, 85, 82 — 82, 83, 85, 85, 87, 90

Part A: Based on the samples, which class generally has higher quiz scores?

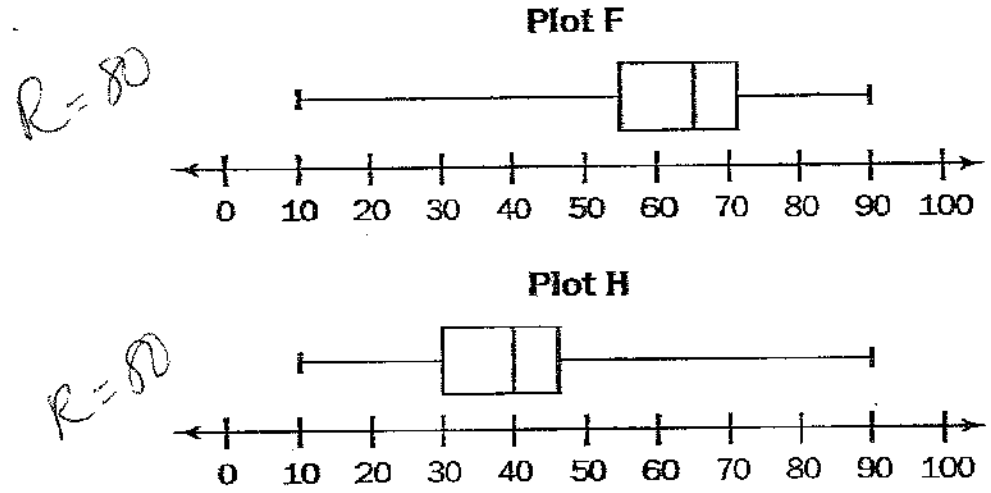
Class B

Part B: Use measures of center and/or variability to justify your answer.

The mean of CLASS A is 82.3
CLASS B is 85.3

Item 19

Consider the two box plots.



Which statement is TRUE?

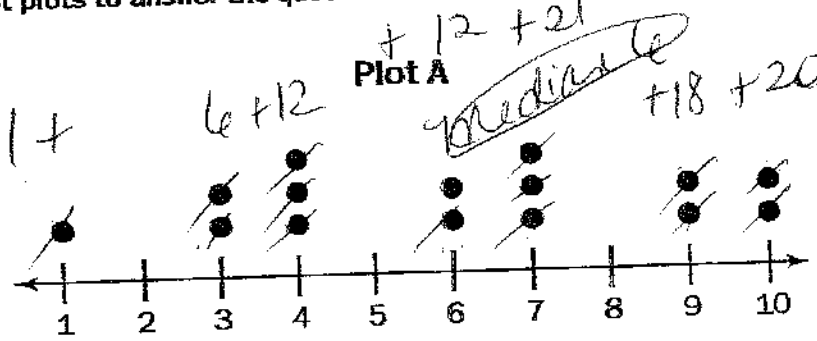
A. Plot F has a greater range than Plot H.
B. Each plot has more than 25% of the data greater than 50.
C. The median of Plot F is greater than the median of Plot H.
D. The spread between the upper and lower quartiles on both graphs is 10.

TRUE

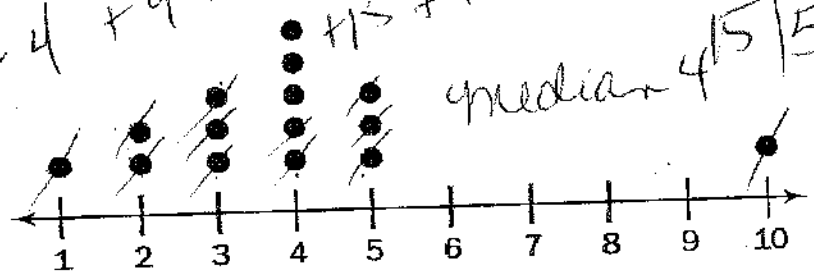
Item 20

Use the dot plots to answer the questions.

Plot A



Plot B



Part A: What is the difference between the medians of Plot A and Plot B? Explain how you found your answer.

Difference is 2 -
Plot A is 6 Plot B is 4

Part B: Which plot has the greater mean? Explain how you found your answer.

Plot A mean = 6
Plot B mean = 3.9$\overline{3}$

Item 21

A bag contains 14 blue marbles and 14 purple marbles.

What is the likelihood of randomly drawing a purple marble?

A. certain
B. likely
C. neither unlikely nor likely
D. not likely

50%

Item 22

A number cube with faces numbered 1 to 6 is rolled 15 times.

In theory, how many times would you expect to roll a number less than 5?

A. 2.5
B. 5
C. 10
D. 12.5

$\frac{4}{6} = \frac{2}{3} = \frac{10}{15}$

Item 23

The table shows the results of randomly selecting colored marbles from a bag 40 times. The marble was returned to the bag after each selection.

	Purple	Green	Blue	White	Pink
Number of Times Selected	16	8	6	9	1

Based on these results, what is the expected probability of randomly selecting a green marble from the bag in one attempt?

A. 0.125
B. 0.20
C. 0.80
D. 1.0

$\frac{8}{40} = \frac{1}{5} = \frac{20}{100}$

Item 24

The six sides of a number cube are labeled 1, 2, 3, 4, 5, and 6. You flip a coin and roll the number cube. In theory, what is the probability that the coin lands on heads and you roll a number greater than 4?

A. $\frac{1}{12}$
B. $\frac{1}{6}$
C. $\frac{1}{3}$
D. $\frac{1}{2}$

$\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$