

Penny Sikes 5th and 6th Grade Mathematics Tournament

Sponsored by Farmers and Merchants Bank

2013 6th Grade Individual Test

- 1) Make sure your name, the full name of your school, and your grade are correct on the answer sheet.
- 2) NO CALCULATORS!
- 3) DO NOT OPEN THIS TEST BOOKLET UNTIL INSTRUCTED TO DO SO BY THE TEST MONITOR.
- 4) If you must leave to go to the restroom, raise your hand and a monitor will escort you to the nearest restroom. Remember you have a time limit.
- 5) Read each problem carefully and mark each answer on your answer sheet.
- 6) Each correct answer on the test will be counted as one point on your individual score.
- 7) If individuals have the same written test score, ties will be broken by determining which student gave correct answers to the most difficult item(s) on the test.
- 8) When the individual testing is over, please make sure you take your pencil, test, and scratch work with you. You will need the pencil for the ciphering rounds.

1. Which of the following represents “three orange crates, each containing a number of oranges, increased by 19 oranges for a total of 85 oranges” ?

- (a) $19x + 85 = 3$ (b) $85x - 19 = 4$ (c) $3x + 19 = 85$ (d) $3x - 19 = 85$

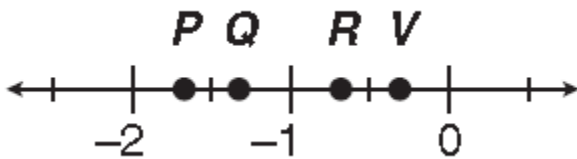
2. A feature film runs 2 hours and 8 minutes. The theater requires 15 minutes between performances and has 12 minutes of previews and short subjects to show before the feature. If the first showing begins with previews at exactly 4:00 pm, when will the third showing of the feature end?

- (a) 11:30 pm (b) 10:30 pm (c) 11:18 pm (d) 11:45 pm

3. Cathleen planned to walk her dog for $\frac{3}{4}$ of a mile. After it started to rain, she decided to walk only $\frac{1}{2}$ of that distance. What fraction of a mile did Cathleen walk her dog?

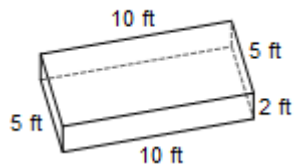
- (a) $\frac{1}{4}$ (b) $\frac{3}{8}$ (c) $\frac{2}{3}$ (d) $\frac{6}{4}$

4. Which point **best** represents $-1\frac{3}{8}$ on the number line below?



- (a) P (b) V (c) R (d) Q

5. Find the volume of the rectangular prism.



- (a) 50 ft^3 (b) 32 ft^3 (c) 100 ft^3 (d) 160 ft^3

6. A model of a park was built on a scale of 1.5 cm to 50 meters. If the distance between two trees in the park is 150 meters, how far apart are the trees on the model?

- (a) 4.5 cm (b) 0.5 cm (c) 75 cm (d) 225 cm

7. What is the order of the following set of numbers from greatest to least?

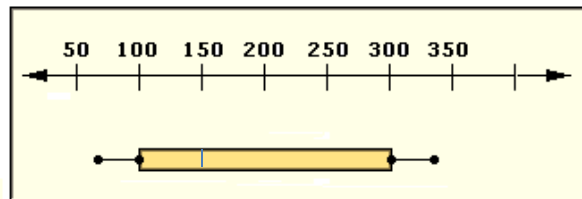
$$\boxed{1\frac{1}{3}, \frac{2}{3}, -\frac{1}{3}, \frac{9}{5}}$$

- (a) $-\frac{1}{3}, \frac{2}{3}, \frac{9}{5}, 1\frac{1}{3}$ (b) $-\frac{1}{3}, 1\frac{1}{3}, \frac{2}{3}, \frac{9}{5}$ (c) $1\frac{1}{3}, \frac{9}{5}, \frac{2}{3}, -\frac{1}{3}$ (d) $\frac{9}{5}, 1\frac{1}{3}, \frac{2}{3}, -\frac{1}{3}$

8. The weekly milk order for the Flounder Inn includes 40 gallons of low-fat milk and 15 gallons of chocolate milk. What is the ratio of the number of low-fat gallons to chocolate gallons in the Flounder Inn's weekly milk order?

- (a) 3:1 (b) 5:1 (c) 5:3 (d) 8:3

9. This boxplot shows the daily earnings, in dollars, of a group of workers. Find the interquartile range.

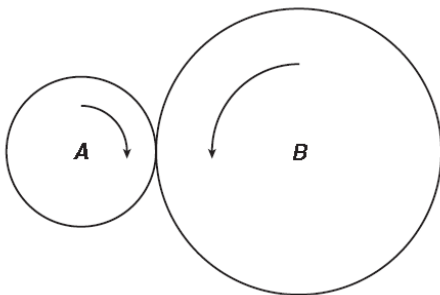


- (a) 300 (b) 200 (c) 150 (d) 100

10. A survey of 1000 registered voters showed that 450 voters plan to vote for Senator Jones in an upcoming election. If there are actually 220,000 voters in the election, how many votes would the survey takers predict that Senator Jones should receive?

- (a) 99,000 (b) 48,900 (c) 95,000 (d) 44,500

11. When wheel B turns 2 revolutions, wheel A turns 5 revolutions. When wheel A turns 40 revolutions, how many times does wheel B turn?



- (a) 8 (b) 16 (c) 80 (d) 100

12. Lila enlarged a picture proportionally. If her original picture was 4 inches wide by 6 inches long and the width of the new, larger picture was 10 inches, what is the perimeter of the new picture?

- (a) 15 inches (b) 20 inches (c) 25 inches (d) 50 inches

13. A couple had dinner at a local restaurant. The dinner bill was \$44 and then they paid a 20% tip. How much did they spend on dinner?

- (a) \$52.80 (b) \$35.20 (c) \$8.80 (d) \$53.80

14. If 50% of a number is 20, what is 75% of the number?

- (a) 8 (b) 15 (c) 30 (d) 45

15. The original price of a new bicycle is \$138.00. If the bicycle is marked down 15%, what is the new price?

- (a) \$20.70 (b) \$117.30 (c) \$123.00 (d) \$153.00

16. One morning, the temperature was 5 degrees below zero. By noon, the temperature rose 20 degrees and then dropped 8 degrees by evening. What was the evening temperature?

- (a) 17 degrees below zero (b) 15 degrees below zero
(c) 12 degrees above zero (d) 7 degrees above zero

17. The high school soccer team has \$90.00 to buy soccer balls. If one soccer ball costs \$15.60, what is the greatest number of soccer balls the team can buy?

- (a) 4 (b) 5 (c) 6 (d) 7

18. What is the greatest common factor of 54, 36, and 24?

- (a) 2 (b) 3 (c) 6 (d) 9

19. Evaluate $7\frac{3}{11} + \frac{9}{10} + \frac{9}{11} =$

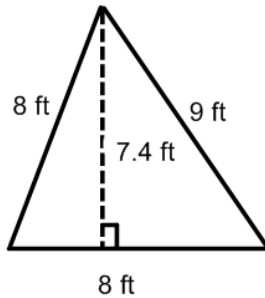
(a) $8\frac{5}{31}$

(b) $8\frac{109}{110}$

(c) $7\frac{109}{110}$

(d) $9\frac{1}{110}$

20. Find the area of the figure below.



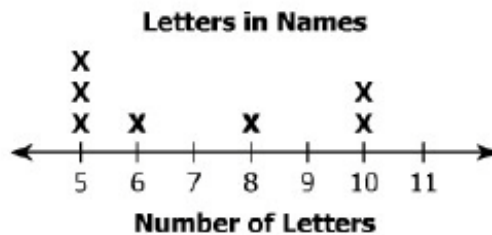
(a) 35 ft^2

(b) 29.6 ft^2

(c) 64 ft^2

(d) 59.2 ft^2

21. This line plot shows the number of letters in the names of 7 students. What is the mean of the data?



Each **X** represents 1 student.

(a) 5 letters

(b) 6 letters

(c) 7 letters

(d) 8 letters

22. What is 44% of 119?

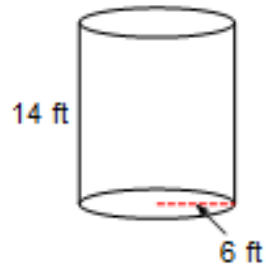
(a) 42.36

(b) 53.36

(c) 52.36

(d) 51.36

23. Find the volume of the cylinder below. Use $\pi = 3.14$. Round to the nearest tenth.



- (a) 1582.6 ft^3 (b) 1884.2 ft^3 (c) 168 ft^3 (d) 527.5 ft^3

24. Find the mean absolute deviation for the following set of numbers:

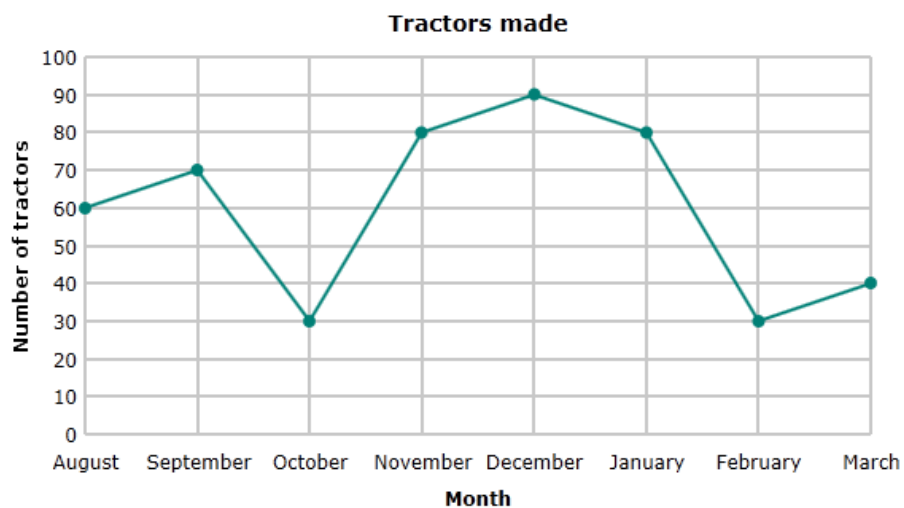
{ 85, 90, 71, 75, 79 }

- (a) 16 (b) 30 (c) 6 (d) 5.8

25. Franco went to the mall with his friends. He spent half of the money he took with him on videos and one-fourth of the remaining money on lunch. If he spent \$6.50 on lunch, how much money did he take with him?

- (a) \$32.50 (b) \$39.00 (c) \$26.00 (d) \$52.00

26. A tractor company kept up with tractor sales between August and March. What is the median number of tractors sold for these months?



- (a) 60 (b) 65 (c) 70 (d) 75

27. Evaluate: $(5 - 3) \times 4^2 - 18 \div 3$

- (a) 58 (b) 26 (c) $4\frac{2}{3}$ (d) 20

28. A mean ogre stole 10 of your muffins. That was $\frac{2}{7}$ of all of them! With how many did you start?

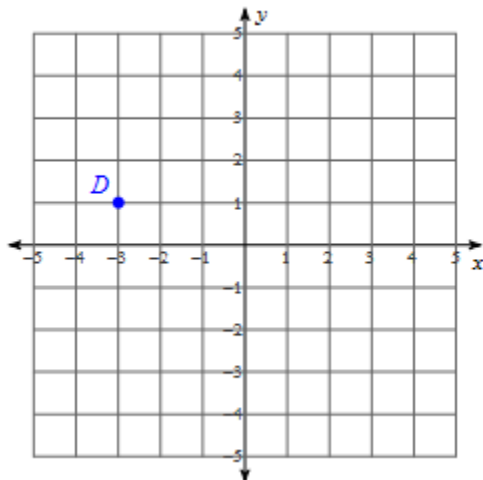
- (a) 35 (b) 33 (c) $\frac{20}{7}$ (d) 38

29. Evaluate the following using the values given.

$b(a + b)$; use $a = 4$ and $b = 3$

- (a) 25 (b) 27 (c) 21 (d) 20

30. What are the coordinates of point D?



- (a) (1,-3) (b) (3,1) (c) (-3,1) (d) (3,-1)

31. A circle has a diameter of 16 inches. Which of the following equations could be used to find the area in square inches of that circle?

- (a) $A = 16 \times \pi$ (b) $A = \pi \times 16^2$ (c) $A = 8 \times \pi$ (d) $A = \pi \times 8^2$

32. Evaluate : $6^2 - 4 \times 6 - 6$

- (a) 6 (b) 9 (c) 0 (d) 188

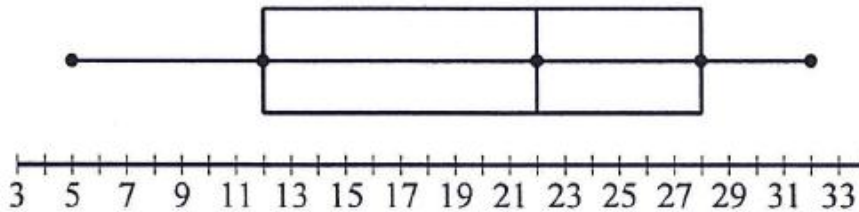
33. Mary earned a score between 75 and 89 on all of her previous math tests. She earned a score of 100 on her next test. Which of the following statements is true?
- (a) The mode will increase
 - (b) The mean will increase
 - (c) The mean will decrease
 - (d) The median will decrease

34. Which of the following inequalities represents the number line below?



- (a) $x < 3$
 - (b) $x > 3$
 - (c) $x \geq 3$
 - (d) $x \leq 3$
35. Find the least common multiple of 32 and 80.
- (a) 320
 - (b) 2560
 - (c) 160
 - (d) 16

36. Which data are represented by the box and whiskers plot?



- (a) 28,22,5,11,32,27,12
 - (b) 28,20,5,21,32,27,12
 - (c) 28,22,5,21,34,27,12
 - (d) 28,22,5,21,32,27,12
37. Sandra has a recipe that requires $\frac{1}{3}$ pound of beef. Using the table below, about how many grams of beef does she need?

Pound Equivalent

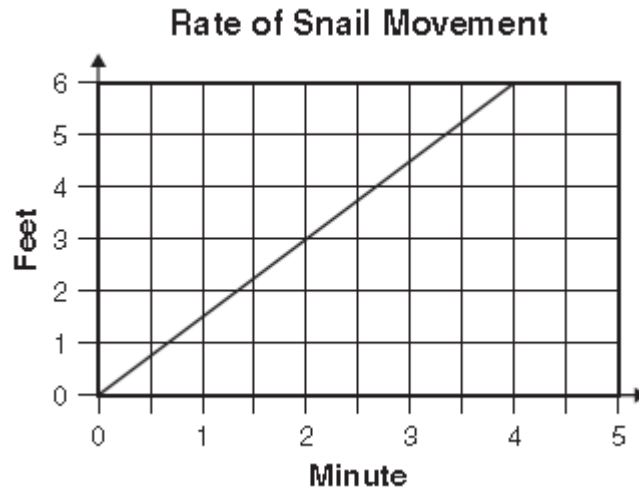
1 pound = 453.6 grams

- (a) 5
- (b) 151
- (c) 454
- (d) 1361

38. Trish's resting heart rate is 50 beats per minute. For every minute she exercises, her heart rate increases 5 beats per minute. How long will it take her to reach a heart rate of 120 beats per minute?

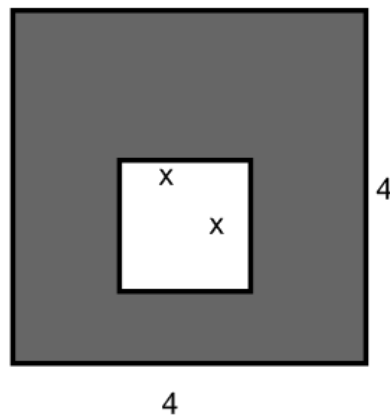
- (a) 5 minutes (b) 14 minutes (c) 34 minutes (d) 70 minutes

39. A snail is trying to get to the other side of the park. At what rate is the snail traveling?



- (a) $\frac{1}{2}$ ft/min (b) 1 ft/min (c) $1\frac{1}{2}$ ft/min (d) 2 ft/min

40. A square with a side of x is inside a square with a side of 4 as shown below. What expression represents the shaded area?

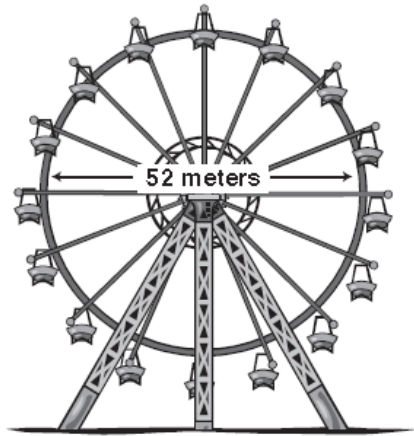


- (a) $16 + x^2$ (b) $16 - x^2$ (c) $16 - 2x$ (d) $16 - 4x$

41. A rectangle has a length of 15 inches and a perimeter of P inches. Which expression below represents the width (w) of the rectangle?

- (a) $w = P - 15$ (b) $w = P - 30$ (c) $w = \frac{P-30}{2}$ (d) $w = P + 15$

42. A ferris wheel at the Ogeechee Fair has a diameter of 52 meters. Which expression can be used to find its circumference, C , in meters?



- (a) $C = 26\pi$ (b) $C = 52\pi$ (c) $C = 26^2\pi$ (d) $C = 104\pi$

43. A recipe for a cake calls for $5\frac{3}{5}$ cups of flour. Gabby has already put in $3\frac{3}{4}$ cups. How many more cups does she need to put in?

- (a) $8\frac{7}{20}$ (b) $1\frac{17}{20}$ (c) $2\frac{3}{20}$ (d) $9\frac{7}{20}$

44. Joey is on the Yellow Jacket bowling team. His scores for the last 12 games are shown below.

90, 103, 110, 95, 105, 110, 90, 112, 110, 96, 94, 110
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What is the mode of the scores?

- (a) 90 (b) 102 (c) 104 (d) 110

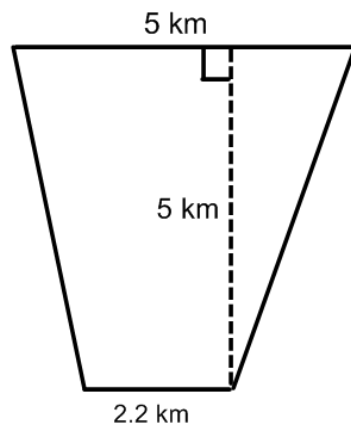
45. A snack bar sells 5 items with a mean price of \$0.60, as shown below.

Snack Menu	
Chips	\$0.50
Juice	\$0.80
Apple	\$0.60
Candy	\$0.70
Gum	\$0.40

Which pair of items could be added to the menu without changing the mean price?

- (a) Banana (\$0.60) and Soda (\$0.75)
- (b) Banana (\$0.60) and Cookie (\$0.50)
- (c) Energy Bar (\$0.45) and Cookie (\$0.50)
- (d) Energy Bar (\$0.45) and Soda (\$0.75)

46. Find the area of the figure below.



- (a) 36 km^2
- (b) 25 km^2
- (c) 18 km^2
- (d) 11 km^2

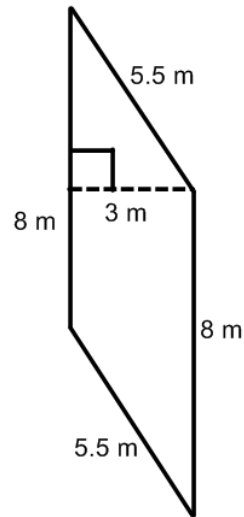
47. Write as an algebraic expression: **p less than 15**

- (a) $p - 15$
- (b) p^{15}
- (c) $15 - p$
- (d) $\frac{15}{p}$

48. In her pocket, Kayla has 2 red marbles, 2 green marbles, and 2 blue marbles that are all of the same size. If Kayla picks one marble out of her pocket without looking, what is the probability that it will be either red or green?

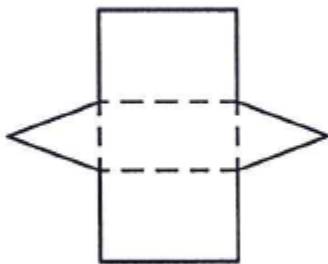
- (a) $\frac{1}{6}$ (b) $\frac{1}{3}$ (c) $\frac{1}{2}$ (d) $\frac{2}{3}$

49. Find the area of the figure below.



- (a) 24 m^2 (b) 44 m^2 (c) 27 m^2 (d) 30 m^2

50. Which figure will the net create?



- (a) Rectangular pyramid (b) triangular prism (c) rectangular prism (d) triangular pyramid

Sixth Grade Written Test Answers 2013:

- | | |
|-------|-------|
| 1. c | 26. b |
| 2. a | 27. b |
| 3. b | 28. a |
| 4. d | 29. c |
| 5. c | 30. c |
| 6. a | 31. d |
| 7. d | 32. a |
| 8. d | 33. b |
| 9. b | 34. d |
| 10. a | 35. c |
| 11. b | 36. d |
| 12. d | 37. b |
| 13. a | 38. b |
| 14. c | 39. c |
| 15. b | 40. b |
| 16. d | 41. c |
| 17. b | 42. b |
| 18. c | 43. b |
| 19. b | 44. d |
| 20. b | 45. d |
| 21. c | 46. c |
| 22. c | 47. c |
| 23. a | 48. d |
| 24. c | 49. a |
| 25. d | 50. b |