Name: _____

Date: _____ **Per:** _____

Math 6

Final Exam

<u>SHOW ALL WORK</u> NEEDED TO ANSWER EACH QUESTION! Good Luck! ☺

1. Which expression gives the prime factorization of 96?

A. $3^2 \cdot 2^3$

B. $2^5 \cdot 3$

C. $4^2 \cdot 6$

D. $1 \cdot 96$

2. The least common multiple for a pair of numbers is 12 times their greatest common factor. Which pair of numbers could this be?

A. 18 and 24

B. 8 and 12

C. 12 and 20

D. 16 and 40

3. Bus A picks up passengers at a bus stop every 50 minutes. Bus B picks up passengers at the same bus stop every 15 minutes. If Bus A and Bus B are both at the bus stop at 9:00 a.m., when is the next time they will be at the bus stop at the same time?

A. 10:45 a.m.

B. 11:15 a.m.

C. 11:30 a.m.

D. 11:45 a.m.

4. What is the quotient of $6\frac{3}{4}$ and $\frac{5}{6}$?

A. $5\frac{11}{12}$

B. $7\frac{7}{12}$

C. $5\frac{5}{8}$

D. $8\frac{1}{10}$

5. Carl and Alana are sharing a pizza. Carl ate $\frac{3}{10}$ and Alana ate $\frac{5}{8}$ of the pizza. What fraction of the pizza is left?

A. $\frac{3}{40}$

B. $\frac{1}{20}$

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

D. $\frac{5}{9}$

6. Bella bought 1.6 pounds of sliced ham for $8.65 per pound and 0.85 pounds of sliced swiss cheese for $6.20 per pound. Find the total cost for the ham and cheese.

A. $18.43

B. $18.67

C. $18.94

D. $19.11

7. Which set of numbers contains only integers?

A. $\left\{18,\ \frac{2}{3},\ 7\frac{1}{2}\right\}$

B. $\left\{\frac{11.5}{2.3},\ -14,\ 8\right\}$

C. $\left\{-5,\ -\frac{1}{2},\ -16\right\}$

D. $\left\{4.2,\ \frac{18}{2},\ -25\right\}$

8. Kelly and Vera each wrote down an integer. The absolute value of Kelly's integer is 30. The opposite of Vera's integer is -8. Which statements below must be true?

I. Kelly's integer is positive.
II. Kelly's integer is negative
III. Vera's integer is positive.
IV. Vera's integer is negative.

A. I and IV
B. II and III
C. I and III
D. III only

9. The high temperature for five days in Alaska are given in the table below. Which statement is true regarding the daily temperatures?

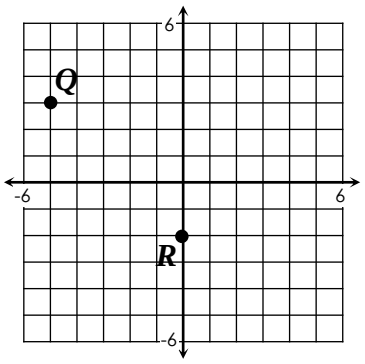
Mon	Tues	Weds	Thurs	Fri
-6° F	-3° F	2° F	-8° F	-11° F

A. Wednesday < Thursday
B. Monday < Friday
C. Tuesday > Thursday
D. Thursday > Monday

10. Finn, Greg, and Ana are scuba diving. relative to the surface of the water, Finn is at -37 feet, Greg is at -56 feet, and Ana is at -20 feet. Which statement is true?

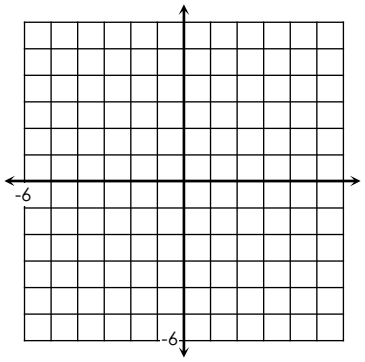
A. Ana is closer to the surface of the water than Greg.
B. Greg is closer to the surface of the water than Finn.
C. Finn is the closest to the surface of the water.
D. Finn needs to swim down to reach the level that Ana is at.

11. Which correctly identifies the coordinates of point Q and point R on the graph below?



A. $Q(3, -5)$, $R(-2, 0)$
B. $Q(3, -5)$, $R(0, -2)$
C. $Q(-5, 3)$, $R(-2, 0)$
D. $Q(-5, 3)$, $R(0, -2)$

12. Beth is plotting a point on the graph below. The point needs to be that is 3 units above and 2 units left of the point (1, -4). In which quadrant will her point lie?



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

13. Which statement is true?

A. $2^6 < 6^2$

B. $11^2 < 5^3$

C. $3^4 > 10^2$

D. $17^2 > 7^3$

14. Which of the following values is a perfect square?

A. 60

B. 125

C. 169

D. 275

15. What is the value of the expression below?

$$32 - 4^2 + 7$$

A. 23

B. 31

C. 9

D. 17

16. What is the value of the expression below?

$$10^2 + 24 \div (12 - 2^3)$$

A. 26

B. 31

C. 106

D. 109

17. For which values of x and y is the value of the expression below less than 30?

$$2x^2 - y^3$$

A. $x = 9$ and $y = 5$

B. $x = 4$ and $y = 1$

C. $x = 7$ and $y = 4$

D. $x = 5$ and $y = 3$

18. Find the value of the expression below if $j = \frac{8}{9}$ and $k = \frac{14}{15}$.

$$1\frac{1}{4}j - \frac{5}{8}k$$

A. $\frac{19}{36}$

B. $\frac{7}{12}$

C. $\frac{13}{24}$

D. $\frac{11}{18}$

19. Which expression is equivalent to the expression shown below?

$$14m + 12 - 3m + 4$$

A. $11m + 8$

B. $11m + 16$

C. $17m + 8$

D. $17m + 16$

20. Which of the expressions is not equivalent to the other three?

A. $7(a + 2)$

B. $20 + 8a - 6 - a$

C. $17 + 3(a - 1) + 4a$

D. $2a + 5(a + 1) + 8$

21. Which of the following is the factored form of $81x - 36y$?

A. $3(27x - 12y)$

B. $9(9x - 4y)$

C. $(9 \cdot 9) \cdot x - (9 \cdot 4) \cdot y$

D. $9^2 \cdot x - 6^2 \cdot y$

22. Which property justifies the statement below?

$$\left(\frac{2}{5} \cdot \frac{5}{2}\right) + 0 = 1 + 0$$

A. Associative Property of Multiplication

B. Distributive Property

C. Identity Property of Addition

D. Inverse Property of Multiplication

23. Which expression is not equivalent to the expression below?

$$(7 \cdot c) + (7 \cdot d)$$

A. $(7 \cdot d) + (7 \cdot c)$

B. $(c \cdot 7) + (d \cdot 7)$

C. $7 \cdot (c + d)$

D. $(7 \cdot 7) + (c \cdot d)$

24. Max solved the equation $9x = 72$. In which of the following equations is the solution for y equivalent to Max's solution for x?

A. $y + 4 = 12$

B. $y - 4 = 12$

C. $2y = 4$

D. $\frac{y}{2} = 16$

25. What value of k makes the equation true?

$$61 = k + 27$$

A. 88

B. 48

C. 44

D. 34

26. What is the solution to the equation below?

$$\frac{5}{8}m = 2\frac{1}{12}$$

A. $3\frac{3}{4}$

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

C. $1\frac{5}{24}$

D. $1\frac{11}{12}$

27. After 8 ounces of juice are poured out from a container, there are 24 ounces left. Which equation can be used to find n, the number of ounces of juice, in the container before the ounces were poured out?

A. $8n = 24$

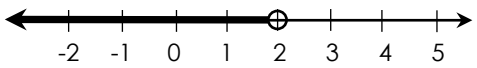
B. $\frac{n}{8} = 24$

C. $n - 8 = 24$

D. $n + 8 = 24$

28. Which graph could represent all numbers that are at most 2?

A.



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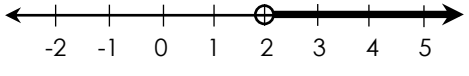
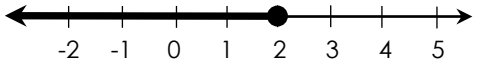
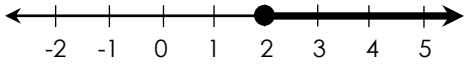


C.



D.



29. Which is the solution to the inequality below?

$$p - 2 \geq 10$$

A. $p \geq 8$

B. $p \geq 12$

C. $p \leq 5$

D. $p \leq 20$

30. Which inequality is true if $k = 2.8$?

A. $4k < 11.2$

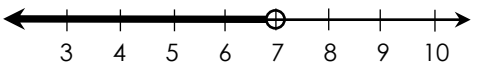
B. $13.083 \geq 4.9k$

C. $9.8 \leq 3.5k$

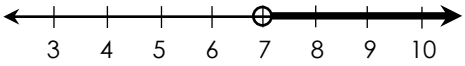
D. $7k > 20$

31. Which number line represents the solution to $28 > 4x$?

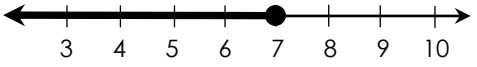
A.



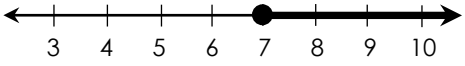
B.



C.



D.



32. In which inequality is -5 a possible solution for w?

A. $w \geq -2$

B. $w \geq -8$

C. $w < -5$

D. $w \leq -11$

33. Shawn swims approximately 40 yards per minute. Yesterday, he swam 1,250 yards. If he would like to swim further today than he did yesterday, swimming at the same rate, which inequality represents the number of minutes, m, he must swim?

A. $m > 32$

B. $m > 35$

C. $m > 31.25$

D. $m > 32.5$

34. The ratio of cars to trucks on a car lot is 5:3. If there are 45 trucks, how many cars are there?

A. 27

B. 40

C. 48

D. 75

35. A smoothie shop combined 3 bananas and 7 cups of strawberries in a large blender to create a smoothie mix. Which ratio of bananas to cups of strawberries will create the same smoothie mix?

A. 4:8

B. 7:3

C. 6:21

D. 12:28

36. What is the sum of the two missing values in the ratio table below?

Wins	Losses
4	?
12	27
?	63

A. 37

B. 38

C. 39

D. 40

37. The label on a box of cereal states that it contains 6 servings. If there are 7.5 cups in the box, how many cups of cereal are there per serving?

A. 1.25

B. 0.8

C. 1.5

D. 1.75

38. An aquarium is filling four empty tanks, of the same size, with water using four different hoses. The table below gives the time it takes each hose to fill a certain number of gallons. If the aquarium began filling the tanks at the same time and each tank will be filled to the same level, which tank will be filled first?

	Minutes	Gallons
Tank A	2	25
Tank B	5	64
Tank C	6	72
Tank D	8	92

A. Tank A

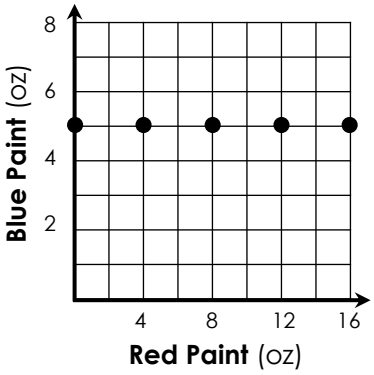
B. Tank B

C. Tank C

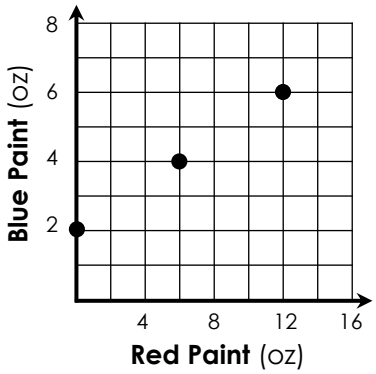
D. Tank D

39. The graphs and tables below show the relationship between ounces of red paint and ounces of blue paint. In which table or graph is the relationship proportional?

A.



B.



C.

Red (oz)	2	4	8
Blue (oz)	8	4	2

D.

Red (oz)	2	4	8
Blue (oz)	3	6	12

40. Alexis bought her lunch from the cafeteria 63 out of 180 school days. Which value represents the fraction of days she bought her lunch?

A. 30%

B. 35%

C. 0.03

D. 0.035

41. When 8% is written as a fraction in simplest form, which statement is true?

A. The numerator is 4.

B. The numerator is 8.

C. The denominator is 25.

D. The denominator is 5.

42. The lengths, in yards, of four pieces of fabric are given below. Which lists the lengths in order from shortest to longest?

Fabric 1	Fabric 2	Fabric 3	Fabric 4
2.4	$2\frac{5}{8}$	$2\frac{3}{5}$	2.195

A. 2, 3, 4, 1

B. 1, 4, 3, 2

C. 4, 1, 3, 2

D. 1, 3, 4, 2

43. Which value is less than 7%?

A. 0.2

B. 0.095

C. $\frac{3}{10}$

D. $\frac{1}{25}$

44. The battery on a laptop can last for up to 15 hours. If the battery is at 24% power, what is the maximum amount that the battery can last?

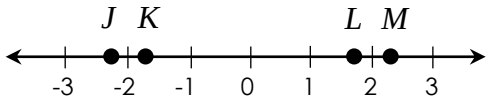
A. 3.2 hours

B. 3.4 hours

C. 3.6 hours

D. 3.8 hours

45. Which point represents the value of $\left|-2\frac{1}{3}\right|$?



A. Point J

B. Point K

C. Point L

D. Point M

46. Which value is greater than -2.7?

A. $-\frac{17}{8}$

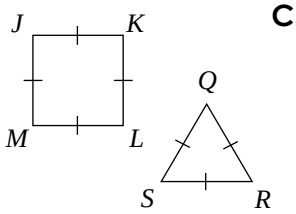
B. $-2\frac{3}{4}$

C. -3.5

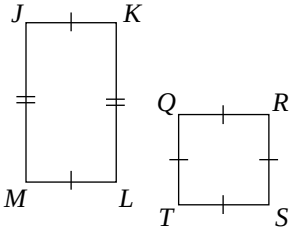
D. -2.716

47. Which pair of polygons are congruent with $\overline{JK} \cong \overline{QR}$?

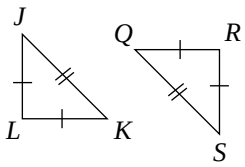
A.



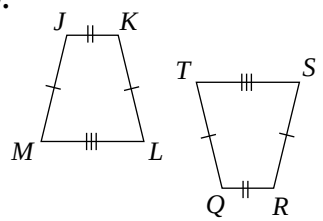
C.



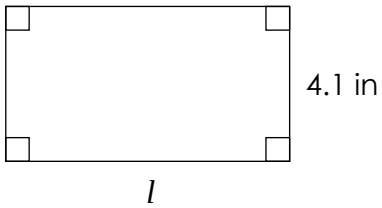
B.



D.



48. The area of the rectangle shown below is 30.75 square inches. What is l, the length of the rectangle?



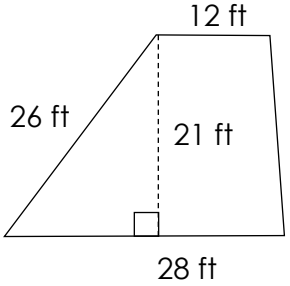
A. 7.2 in

B. 7.5 in

C. 7.8 in

D. 8.3 in

49. A driveway is in the shape of a trapezoid, with the dimensions shown below. What is the area of the driveway in square feet?



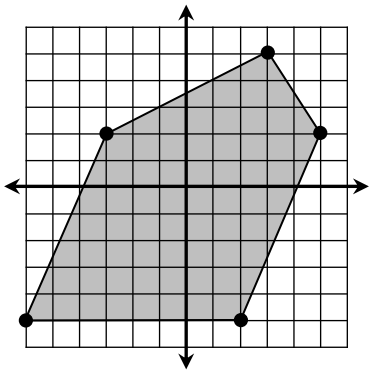
A. 294 ft^2

B. 420 ft^2

C. 460 ft^2

D. 520 ft^2

50. What is the area of the figure graphed below?



* □ = 1 square meter

A. 72 m^2

B. 76 m^2

C. 65 m^2

D. 68 m^2

51. A circular garden has a diameter of 15 feet. What is the area of circle to the nearest square foot?

A. 177 ft^2

B. 181 ft^2

C. 184 ft^2

D. 189 ft^2

52. The tire on a tractor wheel has a radius 42.5 inches. Find the distance the tractor will travel in just one revolution of the wheel to the nearest inch.

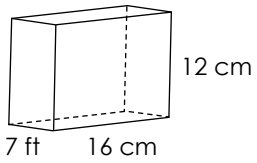
A. 134 inches

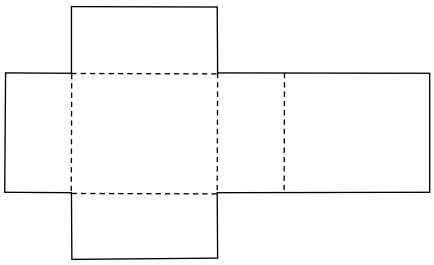
B. 205 inches

C. 234 inches

D. 267 inches

53. A rectangular prism and its net are given below. Use the net to find the surface area of the prism.





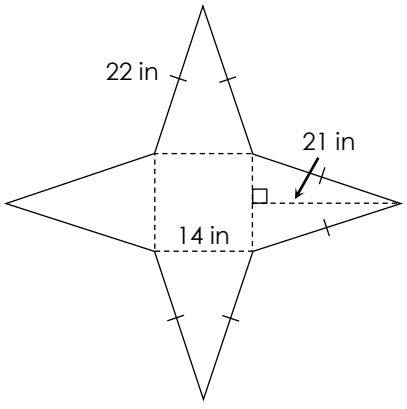
A. 728 cm^2

B. 752 cm^2

C. 776 cm^2

D. 792 cm^2

54. A square pyramid made from cardboard is needed on the set of a musical. The set crew drew a diagram of the pyramid they plan to build. What is the minimum amount of cardboard they will need?



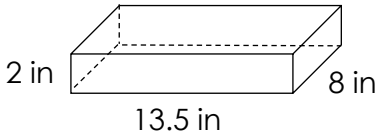
A. 756 in^2

B. 784 in^2

C. 812 in^2

D. 838 in^2

55. A cake pan is in the shape of a rectangular prism with dimensions shown below. What is the maximum amount of cake mix that can be poured into the pan if a one-half inch gap must be left at the top to allow the cake to rise?



A. 162 in^3

B. 174 in^3

C. 198 in^3

D. 216 in^3

56. The table below shows the number of pages of a book that Felix read each day for 6 days. Which measure is the greatest?

Day	1	2	3	4	5	6
Pages	26	34	21	37	30	26

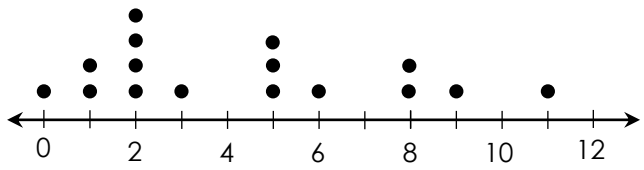
A. Mean
B. Median
C. Mode
D. Range

57. Holly recorded the number of hours she worked for 6 weeks at her part-time job. The hours for each week are listed below. What is the mean absolute value of the hours she worked each week?

{23, 13, 28, 20, 24, 18}

A. 9
B. 4
C. 21
D. 7

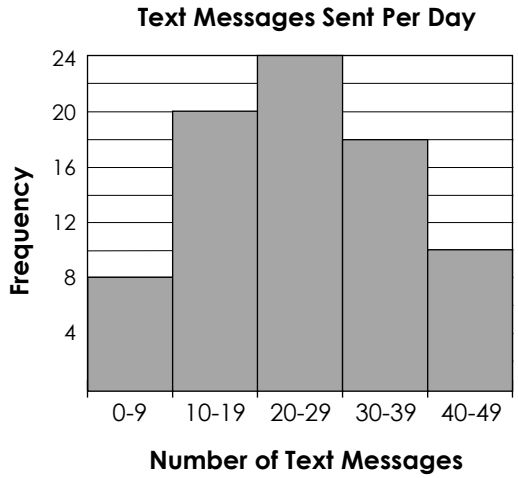
58. The dot plot below shows the number of questions answered incorrectly on a quiz by a group of students. What is the interquartile range?



Number of Incorrect Questions

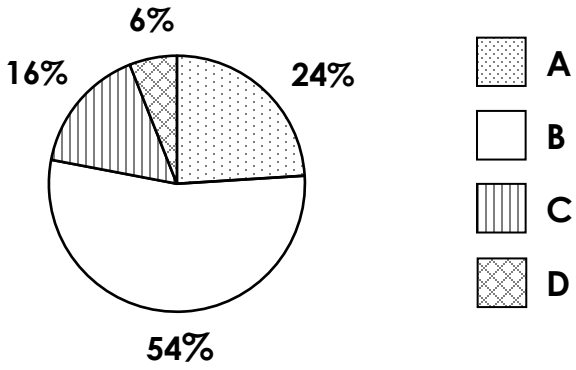
A. 2
B. 4
C. 5
D. 6

59. A group of students were asked how many text messages they each send per day. The results are shown in the histogram below. What percent of those surveyed send at least 20 text messages per day?



A. 60%
B. 55%
C. 70%
D. 65%

60. A test was given to 150 sixth grade math students. The results are shown in the circle graph. Which statement is true?



A. 12 students earned a D
B. 78 students earned a B
C. 36 students earned a C or a D
D. 117 students earned an A or a B