Summer Math Packet
Incoming 7th
Grade

SKILLS

Absolute Value
Area: Trapezoid
Compare rational numbers
Complete function table
Decimals: Addition and subtraction
Decimals to fractions
Define variable and write an expression for a phrase
Distributive Property
Estimation (division)
Factor a number
Find the inequality for a given graphed number line
Formula in word problem
Function Rule for a sequence
Graph ordered pair on coordinate grid
Interquartile range
Mean
Mean Absolute Deviation
Median
Mode
Model percent
Order of Operations
Order rational numbers
Percent
Percent of a number
Percent to decimal/fraction
Percent proportion
Prime factorization
Properties
Proportions
Quartile (first and third)
Range
Ratio
Rule of a function table
Solve and graph an inequality
Solve division and addition equations
Surface area of rectangular & triangular prisms, and pyramids
Unit price
Unit rate
Volume of a rectangular prism
Write an inequality
Write an equation for a word problem

1. The table below shows the number of pennies, nickels, dimes, and quarters that Jennifer has in her pocket. What is the ratio of dimes to nickels expressed in a fraction in simplest from?

Coins	Number of coins
Pennies	8
Nickels	6
Dimes	9
Quarters	4

A.)3/2   B.) 3/5

C.) 2/3   D.) 2/5

2. Mrs. Wood can buy a 28 ounce box of cereal for $4.20 or a 20 ounce box of cereal for $3.60. Which is the better buy? Explain your reasoning.
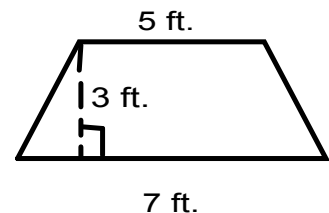
3. The ratio table shows how much Henry's brother earns for working different number of hours. How many hours would he need to work in order to earn $176?

Hours	2	5	8	
Earnings	$16	$40	$64	$176

A.) 18 hours   B.) 20 hours

C.) 22 hours   D.) 24 hours

4. What is the area of the trapezoid shown?

A.) 24 square feet   B.) 18 square feet

C.) 12 square feet   D.) 9.5 square feet

5 ft.

3 ft.

7 ft.

5. Which of the following integers has the greatest absolute value?

A.) 0   B.) 7   C.) -10   D.) 1

6. Harry purchased 1.75 pounds of ground beef for $5.99 per pounds. To the nearest cent, how much did he spend for one pound of beef?

A.) $3.42   B.) $7.74   C.) $10.48   D.) $11.98
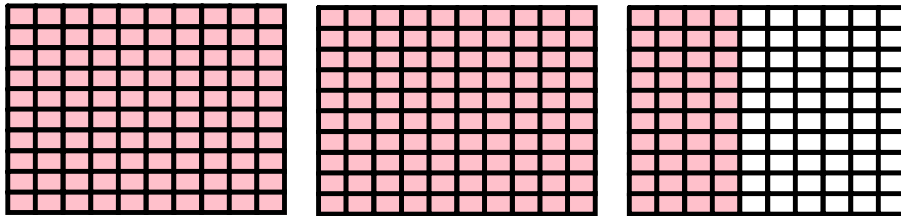
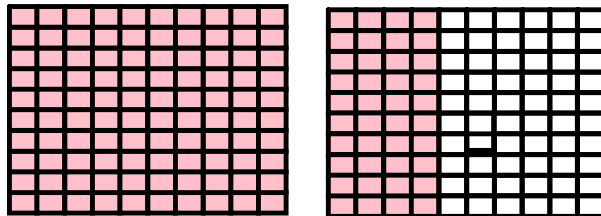**7.** Which of the following is the best estimate for the problem shown below?
$$151 \div 29$$

A.) about 4   B.) about 5   C.) about 6   D.) about 7
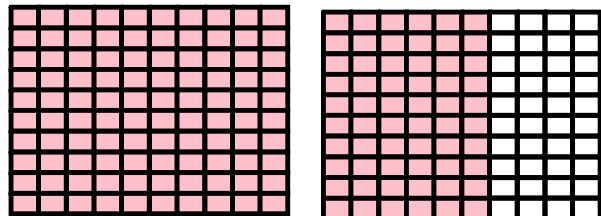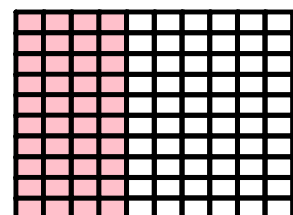
8. Which model represents 140%
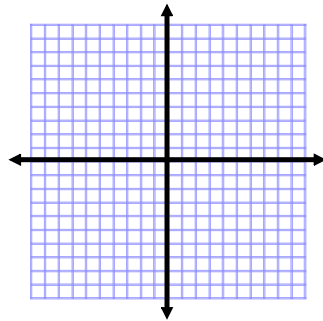
A.)

B.)

C.)

D.)

9. Which of the following is *not* a factor 84?

A.) 2   B.) 3   C.) 7   D.) 8

10. A cake recipe calls for a rate of 4 cups of flour to 3 cups of sugar. For each cup of flour that is used, how may cups of sugar are needed?

A.) 4/3 cup of sugar   B.) 3/4 cup of sugar

C.) 2/3 cup of sugar   D.) 3/7 cup of sugar

11. Graph and label point W(4,-1) on the coordinate plane.

12. Which of the following expressions is equivalent to 6(5+3x)?

A.) 30+3x   B.) 11+9x   C.) 30+18x   D.) 11+3x

13. Define a variable and write an expression to represent the following phrase.

seven years younger than Lisa

14. Use the Distributive Property to write the numerical expression that is equivalent to
                                25 + 10x

15. The sixth graders at Murphy Middle School hope to raise *at least* $250 for a local charity. Which of the following inequalities best represents this situation?

   A.) n≥250   B.) n>250   C.) n< 250   D.) n≤250

16. Which property is represented by the equation below?

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

   A.) Multiplicative Inverse Property
   B.) Multiplicative Identity Property
   C.) Distributive Property
   D.) Commutative Property of Multiplication

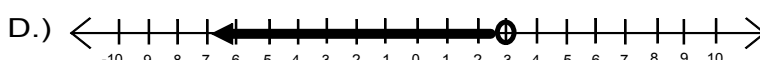**17.** Which ratio is *not* equivalent to 5 : 8?
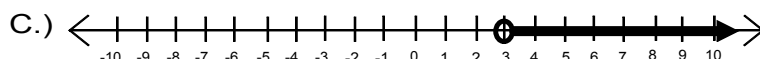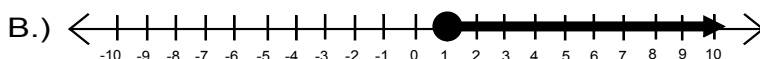
      A.) 10 out of 18
      B.) 15 to 24
      C.) 20/32
      D.) 10:16

18. Alexander answered 19 out of 25 questions correctly on a test. About what percent of his answers were corrected? Explain.

19. Colleen rode her bicycle 9.5 miles in 0.8 hours. What was her average speed in miles per hour?

   A.) 11.875 mph   B.) 10.3 mph   C.) 8.7 mph   D.) 7.6 mph

20. Which number line represents the solution to the inequality x - 1 > 2?

A.)
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←━━━━━━━━━●┼┼┼┼┼┼┼┼┼→
  -10 -9 -8 -7 -6 -5 -4 -3 -2 -1  0  1  2  3  4  5  6  7  8  9 10
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B.)
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←┼┼┼┼┼┼┼┼┼┼┼●━━━━━━━→
  -10 -9 -8 -7 -6 -5 -4 -3 -2 -1  0  1  2  3  4  5  6  7  8  9 10
```

C.)
```
←┼┼┼┼┼┼┼┼┼┼┼┼┼○━━━━━→
  -10 -9 -8 -7 -6 -5 -4 -3 -2 -1  0  1  2  3  4  5  6  7  8  9 10
```

D.)
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←┼┼┼┼━━━━━━━━○┼┼┼┼┼┼→
  -10 -9 -8 -7 -6 -5 -4 -3 -2 -1  0  1  2  3  4  5  6  7  8  9 10
```

21. Martha earns 10 points for each bull's eye that she hits in an archery competition. Which equation shows that relationship between the number of bull's eyes Martha hits *b* and the number of points earned *n* ?

A.) n = b/10   B.) n = 10b   C.) b = 10n   D.) b = 10/n

22. What value of *x* results in a true number sentence in the equation

$$\frac{x}{6} = 2$$

A.) 3   B.) 4   C.) 5   D.) 12

23. There are 30 students in Mr. Opus' music class. If 30% of the students play in the school band. How many students in the class play in the school band?
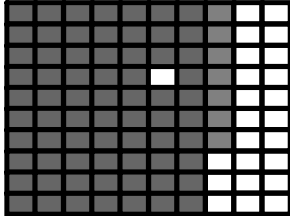
A.) 9 students   B.) 12 students   C.) 15 students   D.) 100 students

24. How is the decimal 0.55 written as a fraction in simplest form?

A.) 55/100   B.) 11/20   C.) 11/50   D.) 11/55

25. Becky uses 4.125 yards of fabric for each blanket she makes. How many yards will she need if she makes 14 blankets?

26. The model below represents 76%. What decimal is equivalent to this percent?

27. Jason's batting average this season is 0.275. This means that he had a hit in 27.5% of his at-bats. If Jason had 11 hits so far this season, how many at-bats has he had?

   A.) 40 at-bats   B.) 35 at-bats   C.) 26 at-bats   D.) 3 at-bats

28. Which of the following shows the rational numbers in order form least to greatest?

   A.) 25%   0.22   1/5   B.) 1/5   0.22   25%

   C.) 0.22   1/5   25%   D.) 0.22   25%   1/5

29. Which of the following expressions correctly uses exponents to show the prime factorization of 360?

   A.) 2^4 x 3^2 x 5   B.) 2^4 x 3 x 5   C.) 2^3 x 3^2 x 5   D. 2^3 x 3 x 5^2

30. Which of the following symbols, when placed in the blank, makes the number sentence true?

$\dfrac{11}{12}$ _____ 0.916666...

   A.) +   B.) =   C.) <   D.) >

31. The table below shows the results of a survey of students' favorite school lunches. Which fraction of the students surveyed said that grilled cheese is their favorite school lunch?

Lunch	Percent
Pizza	35%
Grilled cheese	30%
Chicken	10%
Soup	5%

A.) 3/100   B.) 1/5

C.) 1/4   D.) 3/10

32. The expression $\frac{d}{t}$ can be used to find the average of an object that travels a distance *d* in time *t* . What is a car's average speed if it travels 145 miles in 2.5 hours?

33. Connor is evaluating the expression below

$$3x8 \div 2 + (4 - 1)^2$$

Which operation should be performed first according to the order of operations?

A.) multiply 3 and 8   B.) subtract 1 from 4
C.) divide 8 by 2   D.) evaluate the power

34. Donna's receipt for lunch is shown below. If Donna pays with a $10 bill, how much change will she receive?
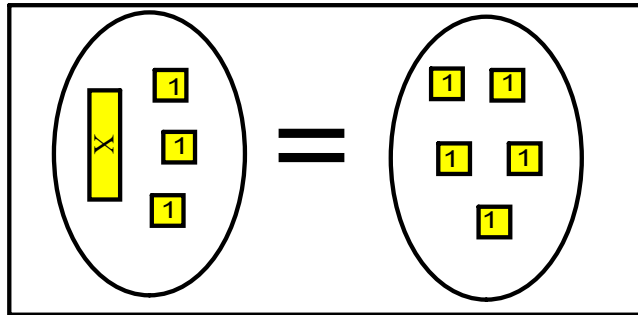
Sandwich $3.79   A.) $6.92   B.) $5.74
Soup $1.45
Drink $ 1.29   C.) $3.18   D.) $3..08
Tax $0.39

35. Which inequality is graphed on the number line?

A.) x> -3   B.) x≥-3   C.) x<-3   D.) x≤-3

36. The algebra mat below models the equation $x + 3 = 5$.

What is the solution to the equation?

A.) -8   B.) -2   C.) 2   D.) 8

37. What is the missing rule in the function table?

x	?
0	0
1	1
3	9
4	16
5	25

A.) -3x   B.) -2x

C.) 2x   D.) x^2

38. Complete the function table.

Input (x)	Output (x+8)
1	
4	
7	
10	

39. Which rule best describes the relationship shown in the function table.

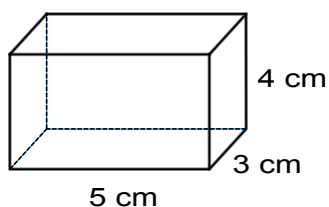| Input	Output
4	?
8	11
12	15
16	19
20	23

A.) subtract 3   B.) add 3

C.) divide by 2   D.) multiply by 2

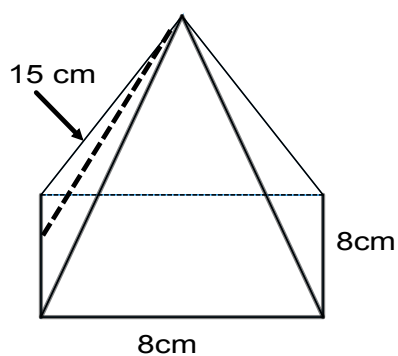Find the volume and surface area of the rectangular prism.

40. Volume =   **41. Surface area =**

4 cm
3 cm
5 cm

42. Find the surface area of the triangular prism.

8 ft
9 ft
8 ft
8 ft
6 ft
8 ft
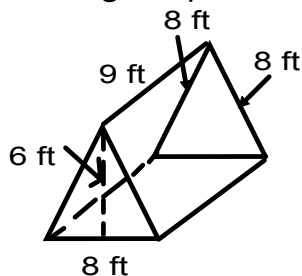
43. Find the surface area of the square pyramid.

15 cm
8cm
8cm

44. The list below shows the number of hours Ladena slept each night for 12 nights. What is the mode of the data?

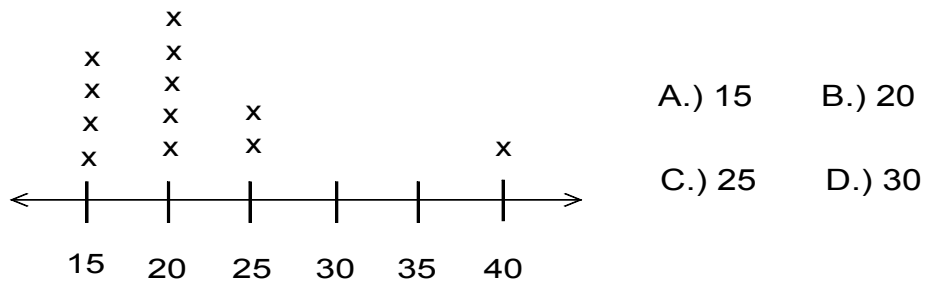8   6   7   7   10   8   8   10   8   8   5   7

A.) 5   B.) 6   C.) 7   D.) 8

45. The table show the number of wins the Saints baseball team had in the last 4 seasons. What is the mean number of wins?

Years	2007	2008	2009	2010
Wins	6	7	13	10

 A.) 6   B.) 9   C.) 10   D.) 13

46. What is the range for the date listed in the line plot below?

A.) 15   B.) 20

C.) 25   D.) 30

47. What would you use to describe the center of the data for the line plot above?

 A.) mean   B.) median   C.) mode   D.) range

48.
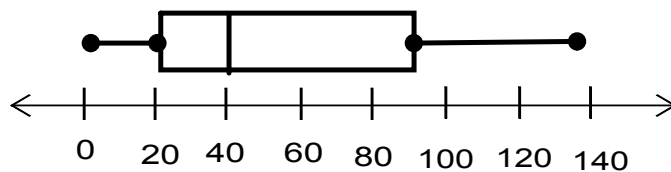
What is the median for the date displayed in the box and whisker plot?
 A.) 0   B.) 85   C.) 40   D.) 20

The table shows the top speeds of sixteen roller coasters.

Top Speeds of Roller Coasters (mph)

80	40	48	70
93	95	60	40
57	40	65	90
92	72	60	72

49. Find the range, median, first quartile, third quartile, and interquartile range.

50. Casper scored a 75, 89, 94, 95, 88, 96 94, 82, 98, and 96 on his science tests last quarter. What is the mean absolution deviation of the data? Round the the nearest tenth.