GRADE 7 HOLIDAY PACKET ANSWER

Name: _____ Class: _____ Date: _____

GRADE 7 MATHEMATICS
HOLIDAY PACKET
THE NUMBER SYSTEM
RATIOS &PROPORTIONS
EQUATIONS & EXPRESSIONS

Directions:

- Read and answer the questions carefully
- Record your answers to this cover page
- Show All Your Work to receive full credit

Questions	Answers
1	
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Score	**%**

Grade 7 Mathematics Reference Sheet

CONVERSIONS

1 yard = 3 feet
1 mile = 5,280 feet

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts

1 pound = 16 ounces
1 ton = 2,000 pounds

CONVERSIONS ACROSS MEASUREMENT SYSTEMS

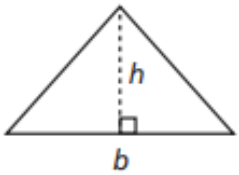
1 inch = 2.54 centimeters
1 meter = 39.37 inches
1 mile = 1.609 kilometers
1 kilometer = 0.6214 mile

1 gallon = 3.785 liters
1 liter = 0.2642 gallon

1 pound = 0.454 kilogram
1 kilogram = 2.2 pounds

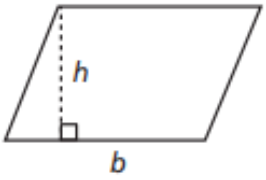
FORMULAS AND FIGURES

Triangle



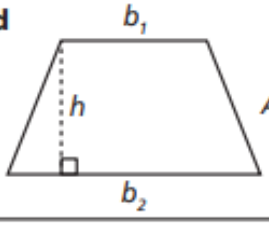
$A = \frac{1}{2}bh$

Parallelogram



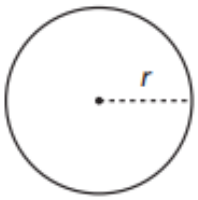
$A = bh$

Trapezoid



$A = \frac{1}{2}h(b_1 + b_2)$

Circle



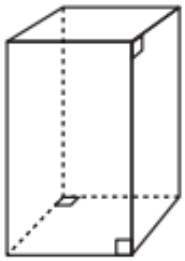
$C = 2\pi r$
$C = \pi d$
$A = \pi r^2$

Simple Interest

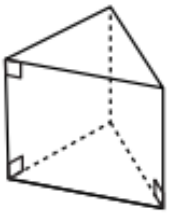
$I = prt$ where I is interest, p is principal, r is rate, and t is time

General Prism $V = Bh$

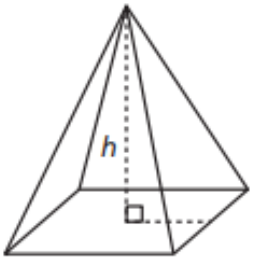
Right Rectangular Prism



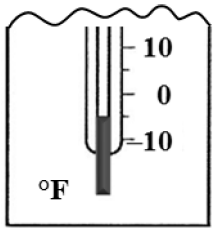
Right Triangular Prism



Right Rectangular Pyramid



1.



What temperature would be 15° F more than the temperature shown on the thermometer above?

A. -20° F B. -10° F C. 10° F D. 15° F

2. Jim's cell phone bill is automatically deducting \$32 from his bank account every month. How much will the deductions total for the year?

A. -32 B. -44 C. -364 D. -384

3. Simplify: $-36 \div (4)$

A. -9 B. $+9$ C. $\frac{-1}{9}$ D. $\frac{+1}{9}$

4. The manager of a company has to order new engines for its delivery trucks after the trucks have been driven 150,000 miles. One of the delivery trucks currently has 119,866 miles on it. The truck has the same delivery route each week and is driven an average of 40,000 miles each year. At this rate, the manager should expect this truck to reach 150,000 miles in approximately how many months?

A. Between 4 and 6 months

B. Between 6 and 8 months

C. Between 8 and 10 months

D. More than 10 months

5. In 1990, the postal rate was 25 cents for the first ounce and 20 cents for each additional ounce or part of an ounce. What did it cost to mail a package that weighed 6.8 ounces?

A. $1.25

B. $1.40

C. $1.45

D. $1.75

6. Your school is having a bake sale. You have volunteered to bake apple pies. Your recipe requires 3 cups of sliced apples for each pie. You have $25.00 to spend on apples.

As you enter the grocery store, you see that they have four different types of apples that each can be used to make apple pies. Given the information listed below, which type of apple would be the best to buy considering the recipe and how much money you have to spend?

- Granny Smith
  3 apples make 2 cups of slices
  Cost = $4.25 a dozen
- Gala
  $3\frac{1}{2}$ apples make 2 cups of slices
  Cost = $4.00 a dozen
- Macintosh
  $3\frac{3}{4}$ apples make 2 cups of slices
  Cost = $3.25 a dozen
- Red Delicious
  $3\frac{1}{4}$ apples make 2 cups of slices
  Cost = $3.95 a dozen

A. Granny Smith B. Gala C. Macintosh D. Red Delicious

7. If $\frac{10.3}{5.62} = \frac{n}{4.78}$, then, of the following, which is closest to n?

A. 2.61 B. 3.83 C. 8.76 D. 8.82

8. Helen made a graph that represents the amount of money she earns, y, for the numbers of hours she works, x. The graph is a straight line that passes through the origin and the point $(1, 12.5)$

Which statement *must* be true?

A. The slope of the graph is 1.

B. Helen earns \$12.50 per hour.

C. Helen works 12.5 hours per day.

D. The y-intercept of the graph is 12.5.

9. Roxanne plans to enlarge her photograph, which is 4 inches by 6 inches. Which of the following enlargements maintains the same proportions as the original photograph?

A. 5 inches by 7 inches

B. 5 inches by $7\frac{1}{2}$ inches

C. 6 inches by 8 inches

D. 8 inches by 6 inches

10. If $\frac{P}{41} = 64$, what does $\frac{P}{82}$ equal?

A. 32

B. 64

C. 128

D. 5248

11. Roberto is making cakes. The number of cups of flour he uses is proportional to the number of cakes he makes.

Roberto uses $22\frac{1}{2}$ cups of flour to make 10 cakes.

Which equation represents the relationship between f, the number of cups of flour Roberto uses, and c, the number of cakes he makes?

A. $f = \frac{4}{9}c$ B. $f = 2\frac{1}{4}c$ C. $f = 2\frac{1}{2}c$ D. $f = 10c$

12. The town of Mayville taxes property at a rate of $42 for each $1,000 of estimated value. What is the estimated value of a property on which the owner owes $5,250 in property tax?

A. $42,000 B. $47,250 C. $125,000 D. $220,500

13. Simplify the expression below.

$3^3 - 2^2$

A. 1 B. 5 C. 23 D. 25

14. Which expression represents the sum of $(2x - 5y)$ and $(x + y)$?

A. $3x - 4y$ B. $3x - 6y$ C. $x - 4y$ D. $x - 6y$

15. Leo bought a used car for x dollars. One year later, the value of the car was $0.88x$. Which expression is another way to describe the change in the value of the car?

A. 0.12% decrease B. 0.88% decrease C. 12% decrease D. 88% decrease

16. Which steps can be used to solve for the value of y?

$$\frac{2}{3}(y + 57) = 178$$

A. Divide both sides by $\frac{2}{3}$, then subtract 57 from both sides

B. Subtract 57 from both sides, then divide both sides by $\frac{2}{3}$

C. Multiply both sides by $\frac{2}{3}$, then subtract 57 from both sides

D. Subtract $\frac{2}{3}$ from both sides, then subtract 57 from both sides

17. When John bought his new computer, he purchased an online computer help service. The help service has a yearly fee of $25.50 and a $10.50 charge for each help session a person uses. If John can only spend $170 for the computer help this year, what is the maximum number of help sessions he can use this year?

A. 4 sessions B. 12 sessions C. 13 sessions D. 14 sessions

18. A company designed two rectangular maps of the same region. These maps are described below.

- Map 1: The dimensions are 8 inches by 10 inches. The scale is $\frac{3}{4}$ mile to 1 inch.
- Map 2: The dimensions are 4 inches by 5 inches.

Which ratio represents the scale on Map 2?

A. $\frac{1}{2}$ mile to $\frac{3}{4}$ inch

B. $\frac{3}{4}$ miles to $\frac{1}{2}$ inch

C. $\frac{1}{4}$ mile to 1 inch

D. $\frac{3}{8}$ mile to 1 inch

19. What is the value of the expression below?

$$\frac{3}{8} + (-\frac{4}{5}) + (-\frac{3}{8}) + \frac{5}{4}$$

A. 0

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

C. $\frac{9}{20}$

D. $2\frac{4}{5}$

20. A crew of highway workers paved $\frac{2}{15}$ mile in 20 minutes. If they work at the same rate, what portion of a mile will they pave in one hour?

A. $\frac{1}{150}$

B. $\frac{2}{45}$

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

D. $\frac{5}{2}$

21. Last week Len spent \$18 to bowl 4 games. This week he spent \$27 to bowl 6 games. Len owns his bowling ball and shoes, so he only has to pay for each game that he bowls. If each of these bowling games costs the same amount of money, what is the constant of proportionality between the money spent and the number of games played?

A. 1.5 B. 2.0 C. 4.5 D. 9.0

22. What is the value of the expression below?

$$-0.75 - \left(-\tfrac{2}{5}\right) + 0.4 + \left(-\tfrac{3}{4}\right)$$

A. -1.5 B. -0.7 C. 0.8 D. 2.3

23. What is the value of the expression $\dfrac{\left(\frac{2}{3} - \frac{5}{6}\right)}{\frac{3}{4}}$?

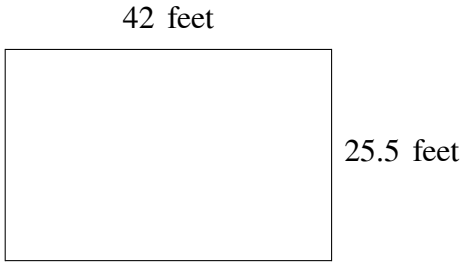
A. $-\frac{2}{9}$ B. $-\frac{1}{8}$ C. $\frac{1}{8}$ D. $\frac{2}{9}$

24. What is the value of the expression below?

$$\left(3\tfrac{1}{2} - 9\tfrac{3}{4}\right) \div (-2.5)$$

A. -2.5 B. -2.3 C. 2.3 D. 2.5

25. Wallpaper was applied to one rectangular wall of a large room. The dimensions of the wall are shown below.



If the total cost of the wallpaper was $771.12, what was the cost, in dollars, of the wallpaper per square foot?

A. $0.61 B. $0.72 C. $1.39 D. $1.65