

**Summer Math ~ 7th Grade Math - Entering 8th Grade**

**All work must be done on loose leaf and turned in with the packet.**

**Multiple Choice**

*Identify the choice that best completes the statement or answers the question.*

\_\_\_\_\_ 1. Determine which ratio forms a proportion with  $\frac{10}{6}$  by using cross products.

- a.  $\frac{15}{12}$                       b.  $\frac{30}{9}$                       c.  $\frac{20}{9}$                       d.  $\frac{30}{18}$

\_\_\_\_\_ 2. Use  $<$ ,  $=$ , or  $>$  to complete the statement:  $20 \blacksquare 13$ .

- a.  $>$                       b.  $<$                       c.  $=$                       d. none of these

**Find the value of the expression.**

\_\_\_\_\_ 3.  $21.03 + 80.4 - 21.03$

- a. 80.4                      b. 59.37                      c. 21.03                      d. 101.43

\_\_\_\_\_ 4.  $-11 + |-19|$

- a. 30                      b. -8                      c. 8                      d. -30

\_\_\_\_\_ 5.  $8 - 42 \div 7 + 7 \cdot 3$

- a. 6.4                      b. 23                      c. 27                      d. 7

**Find the product.**

\_\_\_\_\_ 6.  $4.4 \cdot 15 \cdot 1$

- a. 67                      b. 19.4                      c. 20.4                      d. 66

\_\_\_\_\_ 7.  $1\frac{1}{4} \cdot 3\frac{2}{3}$

- a.  $4\frac{3}{12}$                       b.  $3\frac{1}{6}$                       c.  $4\frac{5}{6}$                       d.  $4\frac{7}{12}$

**Find the quotient.**

\_\_\_\_\_ 8.  $0.06 \overline{)7.8}$

- a. 130                      b. 0.013                      c. 1.3                      d. 0.13

- \_\_\_\_\_ 9.  $\frac{24}{8}$   
a.  $\frac{1}{3}$                       b.  $-3$                       c.  $3$                       d.  $-\frac{1}{3}$
- \_\_\_\_\_ 10.  $\frac{3}{4} \div 5$   
a.  $6\frac{2}{3}$                       b.  $\frac{3}{20}$                       c.  $3\frac{3}{4}$                       d.  $\frac{4}{15}$
- \_\_\_\_\_ 11.  $3\frac{2}{6} \div 1\frac{1}{2}$   
a.  $\frac{9}{20}$                       b.  $3\frac{2}{3}$                       c.  $2\frac{2}{9}$                       d.  $5$
- \_\_\_\_\_ 12. What metric measure best describes the amount of juice in a full pitcher?  
a.  $0.072$  kL                      b.  $1$  kg                      c.  $3$  L                      d.  $50$  mL

**Use a number line to find the sum.**

- \_\_\_\_\_ 13.  $18 + (-15)$   
a.  $-3$                       b.  $33$                       c.  $3$                       d.  $-33$
- \_\_\_\_\_ 14. Find the range from  $(-48)$  to  $69$ .  
a.  $-117$                       b.  $-21$                       c.  $21$                       d.  $117$
- \_\_\_\_\_ 15. Use the Associative Property of Multiplication to simplify  $(-3) \cdot (-6) \cdot (-5)$ .  
a.  $-80$                       b.  $-90$                       c.  $90$                       d.  $80$

**Find the difference.**

- \_\_\_\_\_ 16.  $24.5 - 20.99$   
a.  $4.51$                       b.  $3.41$                       c.  $3.51$                       d.  $2.51$
- \_\_\_\_\_ 17.  $\frac{7}{9} - \frac{6}{9}$   
a.  $\frac{1}{81}$                       b.  $1\frac{4}{9}$                       c.  $\frac{1}{9}$                       d.  $\frac{1}{18}$
- \_\_\_\_\_ 18.  $3\frac{5}{9} - 1\frac{3}{9}$   
a.  $4\frac{2}{9}$                       b.  $4\frac{1}{9}$                       c.  $2\frac{1}{9}$                       d.  $2\frac{2}{9}$

**Find the product mentally using the Distributive Property.**

- \_\_\_\_\_ 19.  $2(5.9)$   
a.  $10.2$                       b.  $13.8$                       c.  $11.8$                       d.  $8.2$

\_\_\_\_\_ 20. Find the outlier of the set of data: 24, 37, 33, 31, 28, 25, 33, 12  
a. 31                      b. 12                      c. 30                      d. 33

\_\_\_\_\_ 21. Find the median of the set of data: 61, 40, 65, 48, 64, 57, 64, 42, 56, 55  
a. 55.2                      b. 56.5                      c. 52.5                      d. 64

\_\_\_\_\_ 22. Simplify:  $4.2^2$ .  
a. 6.2                      b. 17.64                      c. 8.4                      d. 4.22

**Simplify.**

\_\_\_\_\_ 23.  $4^2 \cdot (3+5^2)$   
a. 73                      b. 104                      c. 448                      d. 1024

\_\_\_\_\_ 24. Write 517,000 in scientific notation.  
a.  $5.17 \times 10^5$                       b.  $51.7 \times 10^5$                       c.  $5.17 \times 10^{-5}$                       d.  $51.7 \times 10^{-5}$

\_\_\_\_\_ 25. A planet has an approximate diameter of  $1.83 \times 10^4$  kilometers. Write this number in standard form.  
a. 183,000 km                      b. 1,830,000 km                      c. 183 km                      d. 18,300 km

\_\_\_\_\_ 26. Tell which number is prime: 18, 42, 68, 79.  
a. 18                      b. 42                      c. 68                      d. 79

\_\_\_\_\_ 27. You go to the grocery store every 4 days. Your friend goes to the grocery store every 10 days. If you and your friend both go to the grocery store today, when will you both go to the grocery store again on the same day?  
a. in 20 days                      b. in 40 days                      c. in 10 days                      d. in 16 days

\_\_\_\_\_ 28. Use multiples to write two fractions equivalent to  $\frac{7}{9}$ .  
a.  $\frac{14}{18}, \frac{8}{10}$                       b.  $\frac{14}{18}, \frac{21}{27}$                       c.  $\frac{6}{8}, \frac{21}{27}$                       d.  $\frac{10}{12}, \frac{28}{36}$

\_\_\_\_\_ 29. Jennifer is sewing costumes for a school play. Each outfit requires 4 yards of material. How many complete costumes can Jennifer make if she has 54 yards of fabric?  
a. 216 costumes                      b. 13 costumes                      c. 12 costumes                      d. 215 costumes

**Order from least to greatest.**

\_\_\_\_\_ 30.  $-0.3, \frac{3}{7}, -\frac{1}{2}, 0.22$   
a.  $\frac{3}{7}, 0.22, -0.3, -\frac{1}{2}$                       c.  $-\frac{1}{2}, -0.3, 0.22, \frac{3}{7}$   
b.  $-0.3, \frac{3}{7}, -\frac{1}{2}, 0.22$                       d.  $-\frac{1}{2}, 0.22, -0.3, \frac{3}{7}$

\_\_\_\_ 31.  $68\%, \frac{1}{2}, 0.55, 1.28$

a.  $\frac{1}{2}, 0.55, 68\%, 1.28$

c.  $\frac{1}{2}, 68\%, 0.55, 1.28$

b.  $1.28, 68\%, 0.55, \frac{1}{2}$

d.  $1.28, \frac{1}{2}, 68\%, 0.55$

**Estimate the difference.**

\_\_\_\_ 32.  $5\frac{2}{11} - 3\frac{2}{18}$

a. 3

b. 1

c. 4

d. 2

**Estimate the product.**

\_\_\_\_ 33.  $7\frac{2}{3} \cdot 3\frac{7}{9}$

a. 28

b. 21

c. 32

d. 24

**Find the sum.**

\_\_\_\_ 34.  $\frac{2}{9} + \frac{1}{9}$

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

b.  $\frac{1}{18}$

c.  $\frac{1}{27}$

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

\_\_\_\_ 35. A triangle has 3 sides that measure  $5\frac{1}{4}$  ft,  $2\frac{5}{6}$  ft, and  $8\frac{7}{12}$  ft. What is the perimeter of the triangle?

a.  $16\frac{1}{12}$  ft

b.  $15\frac{2}{3}$  ft

c.  $15\frac{13}{22}$  ft

d.  $16\frac{2}{3}$

**Complete.**

\_\_\_\_ 36.  $5\frac{11}{16}$  lb =  oz

a. 91 oz

b. 80 oz

c.  $\frac{91}{256}$  oz

d. 61 oz

\_\_\_\_ 37. Find the sum or difference. Round your answer appropriately.

6.8 L + 5 L

a. 11.7 pt

b. 11 pt

c. 11.8 pt

d. 12 pt

**Evaluate.**

\_\_\_\_ 38.  $-5g - 6$  for  $g = -2$

a. 4

b. 16

c. 10

d. -13

- \_\_\_\_\_ 39. Write an algebraic expression for the sum of 3 coins and  $c$  coins.
- a.  $c + 3$                       b.  $\frac{c}{3}$                       c.  $3c$                       d.  $c - 3$
- \_\_\_\_\_ 40. Brandon owns nearly 2 times as many CDs as Ingrid. Brandon owns 56 CDs. Write an equation and use it to estimate the number  $n$  of CDs Ingrid owns.
- a.  $n - 2 = 56$ ; about 58 CDs                      c.  $\frac{n}{2} = 56$ ; about 112 CDs
- b.  $n + 2 = 56$ ; about 54 CDs                      d.  $2n = 56$ ; about 28 CDs

**Solve the equation.**

- \_\_\_\_\_ 41.  $14 = t - 44$
- a.  $-30$                       b.  $-58$                       c.  $30$                       d.  $58$
- \_\_\_\_\_ 42.  $-30 = j + 50$
- a.  $80$                       b.  $20$                       c.  $-1,500$                       d.  $-80$
- \_\_\_\_\_ 43.  $-12x = -48$
- a.  $576$                       b.  $4$                       c.  $-4$                       d.  $\frac{1}{4}$
- \_\_\_\_\_ 44.  $5.8 = \frac{z}{2.2}$
- a.  $127.6$                       b.  $0.37$                       c.  $3.7$                       d.  $12.76$
- \_\_\_\_\_ 45. Kyle types college reports for \$2.15 per page. He also charges \$5 to cover the cost of supplies. Write an expression for total earnings for typing a report of  $p$  pages. Then evaluate the expression for a 28-page report.
- a.  $(2.15 + 5)p$ ; \$200.20                      c.  $2.15 + 5p$ ; \$142.15
- b.  $5 + 2.15p$ ; \$65.20                      d.  $2.15p + 5$ ; \$60.20

**Use number sense to solve the equation.**

- \_\_\_\_\_ 46.  $\frac{r}{4} - 1 = 4$
- a.  $1.3$                       b.  $0.8$                       c.  $12$                       d.  $20$
- \_\_\_\_\_ 47. Which inequality has 20 as a solution?
- a.  $12 + m < -6$                       b.  $-6 + m > 12$                       c.  $12 + m = -6$                       d.  $-6 + m < 12$
- \_\_\_\_\_ 48. Find a number that is a solution to the compound inequality  $11 < h \leq 14$ .
- a.  $12$                       b.  $11$                       c.  $16$                       d.  $7$

**Solve the inequality.**

- \_\_\_\_\_ 49.  $x + 19 \leq -5$
- a.  $x \leq -24$                       b.  $x \leq 24$                       c.  $x \leq 14$                       d.  $x \leq -14$

- \_\_\_\_\_ 50.  $\frac{x}{-10} > 6$   
 a.  $x > 60$                       b.  $x > -60$                       c.  $x < -60$                       d.  $x < -4$
- \_\_\_\_\_ 51. The difference between a number  $x$  and 13 is at least 15. Write and solve an inequality.  
 a.  $x - 13 \leq 15; x \leq 28$                       c.  $x + 13 \geq 15; x \geq 2$   
 b.  $x - 13 \geq 15; x \geq 2$                       d.  $x - 13 \geq 15; x \geq 28$

**Express the ratio as a decimal. Round to the nearest hundredth.**

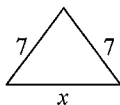
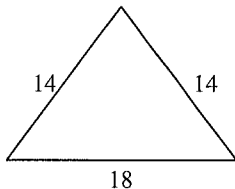
- \_\_\_\_\_ 52.  $\frac{62}{52}$   
 a. 1.49                      b. 0.84                      c. 1.19                      d. 1.01
- \_\_\_\_\_ 53. Jake sold 39 tickets to the school fair and Jeanne sold 12 tickets. What is the ratio, in simplest form, of the number of tickets Jeanne sold to the number of tickets Jake sold?  
 a.  $\frac{13}{4}$                       b.  $\frac{39}{12}$                       c.  $\frac{12}{39}$                       d.  $\frac{4}{13}$
- \_\_\_\_\_ 54. A soccer player scored 32 goals in 89 games. Express the player's scoring rate as a unit rate rounded to the nearest thousandth.  
 a. 2.7813 goals per game                      c. 0.360 goals per game  
 b. 2.781 goals per game                      d. 0.3596 goals per game
- \_\_\_\_\_ 55. You pay \$1.75 for 5 bagels. What is the unit price?  
 a. \$0.09 per bagel                      c. \$0.35 per bagel  
 b. \$0.45 per bagel                      d. \$0.44 per bagel
- \_\_\_\_\_ 56. Determine which ratio forms a proportion with  $\frac{18}{21}$  by writing the ratios in simplest form.  
 a.  $\frac{12}{70}$                       b.  $\frac{12}{14}$                       c.  $\frac{66}{70}$                       d.  $\frac{60}{77}$
- \_\_\_\_\_ 57. Which ratios *cannot* form a proportion?  
 a.  $\frac{2}{6.3}, \frac{5}{15.8}$                       b.  $\frac{3}{8}, \frac{1.5}{4}$                       c.  $\frac{2}{2.6}, \frac{10}{13}$                       d.  $\frac{5}{5.125}, \frac{4}{4.1}$
- \_\_\_\_\_ 58. Drinking 8 fluid ounces of milk provides 270.0 milligrams of calcium. How many fluid ounces of milk provide 72.5 milligrams of calcium? Round to the nearest tenth.  
 a. 2.1 fluid ounces                      c. 2.6 fluid ounces  
 b. 2.3 fluid ounces                      d. 1.8 fluid ounces

**Solve the proportion using cross products. Round to the nearest hundredth if necessary.**

- \_\_\_\_\_ 59.  $\frac{\$18.45}{m \text{ gal}} = \frac{\$3.60}{7.5 \text{ gal}}$   
 a. 38.44                      b. 32.54                      c. 8.86                      d. 42.25

The triangles below are similar. Find the value of  $x$ .

\_\_\_\_\_ 60.



- a. 9                      b. 8                      c. 10.5                      d. 11

\_\_\_\_\_ 61. Los Angeles is about 385 miles from San Francisco. How far apart would the cities be on a map with a scale of 1 in. = 25 mi? If necessary, round to the nearest hundredth.

- a. 15.4 in.                      b. 16.04 in.                      c. 15.65 in.                      d. 14.4 in.

Write the fraction as a percent. If necessary, round to the nearest tenth of a percent.

\_\_\_\_\_ 62.  $\frac{9}{25}$

- a. 47.1%                      b. 47.2%                      c. 36.4%                      d. 36%

Write the percent as a decimal and as a fraction.

\_\_\_\_\_ 63. 0.78%

- a. 0.078;  $\frac{39}{50,000}$                       c. 0.78;  $\frac{39}{50}$   
 b. 0.0078;  $\frac{39}{5,000}$                       d. 78;  $\frac{39}{500}$

\_\_\_\_\_ 64. a. Utopia has a population of 17,000. If 70% of the population voted in the last presidential election, how many people voted in the election?  
 b. The number of voters last year was 40% of the number of voters in the previous year. How many people voted in the previous year?  
 a. 11,400 people; 4,060 people  
 b. 11,900 people; 29,750 people  
 c. 6,800 people; 17,000 people  
 d. 6,300 people; 3,910 people

\_\_\_\_\_ 65. Find  $\frac{23}{25}$  % of \$29,000.

- a. \$3,152.17                      b. \$26,680.00                      c. \$315.22                      d. \$266.80

Use a proportion to solve. If necessary, round to the nearest percent.

\_\_\_\_\_ 66. What percent of 44 is 11?

- a. 25                      b. 26                      c. 400                      d. 11

Name: \_\_\_\_\_

ID: A

- \_\_\_\_\_ 67. 95 is 20% of what number?
- a. 523
  - b. 594
  - c. 475
  - d. 19

**Use an equation to solve.**

- \_\_\_\_\_ 68. What percent of 355 is 71?
- a. 20%
  - b. 500%
  - c. 23.5%
  - d. 501.5%
- \_\_\_\_\_ 69. Find the percent of markup. Round to the nearest tenth.  
\$33.00 to \$45.00
- a. 35.6%
  - b. 4.0%
  - c. 12.0%
  - d. 36.4%
- \_\_\_\_\_ 70. Estimate a 15% tip for a \$26.80 meal.
- a. \$1.35
  - b. \$2.70
  - c. \$4.05
  - d. \$31.05
- \_\_\_\_\_ 71. The measures of two angles of a triangle are  $147^\circ$  and  $17^\circ$ . Find the measure of the third angle.
- a.  $164^\circ$
  - b.  $16^\circ$
  - c.  $74^\circ$
  - d.  $130^\circ$

**Short Answer**

72. Explain how to change  $\frac{4}{20}$  into a percent.

73. Explain how you can estimate the commission fee on a sale of \$8,000 when the commission is 4.1%.