

Rising Eighth Grade -- Summer Math Practice
(for students entering ALGEBRA and ALGEBRA TRANSITION)

I am looking forward to teaching you this upcoming school year! Together we will explore many mathematical topics. This will be a challenging journey, but one in which you will learn a lot. So you are prepared for our math adventure, I encourage you to keep your skills sharp this summer by completing this packet.

If you get to a problem that you are unfamiliar with or have forgotten how to work, ask a friend, neighbor or parent, or look it up online. Please don't skip it! Once you have solved the problem, ask yourself..."Does my answer make sense?"

It is not recommended that you complete this packet immediately following school dismissal in May, nor the night before the packet is due. Student learning is most effective if the packet is completed during the months of July and August. Since there are 2 parts that need to be completed, pace yourself and divide the material between July and August. Please bring the completed packet on the first full day of school. This will be your first grade in 8th grade math, so PLEASE follow directions.

How your packet of work should look:

- Please show all work for your problems. You may do your work next to the problem or on another sheet of paper.
- All work is to be neat.
- All work is to be completed in pencil.
- Keep the work together in a folder with your name on it.
- DO NOT use a calculator.

I hope you have a terrific summer and I look forward to seeing you on the first day of school. Please email me if you have any questions: LJohnson@heathwood.org.

Sincerely,
Ms. Johnson

Rising 8th Grade Summer Math Packet for Algebra and Algebra Transition
PART 1 (please transfer your answers to the answer sheet located at the end)
NO CALCULATOR!!

Multiple Choice

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

- ___ 1. Evaluate 3^3 .
a. 81
b. 27
c. $3 \cdot 3 \cdot 3$
d. 9
- ___ 2. Find $\sqrt{2,500}$.
a. 50
b. 25
c. 10
d. 7
- ___ 3. **NUMBERS** A number is squared and then 5 is subtracted from the result. The final answer is 44. What is the number?
a. 5
b. 6
c. 7
d. 8

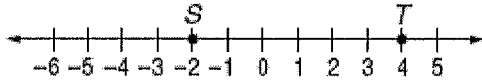
Solve each equation.

- ___ 4. $3 + x = 10$
a. 6
b. 7
c. 8
d. 13
- ___ 5. $24 - 17 = n$
a. 41
b. 8
c. 7
d. 6
- ___ 6. $\frac{t}{5} = 9$
a. 1.8
b. 5
c. 9
d. 45
- ___ 7. Name the property of multiplication shown by $6 \cdot 4 = 4 \cdot 6$.
a. Associative
b. Commutative
c. Distributive
d. Identity
- ___ 8. Use the Distributive Property to write $2(5 + 3)$ as an equivalent expression. Then evaluate the expression.
a. $2(8)$; 16
b. $2(5) + 2(3)$; 16
c. $2(5) + 3$; 13
d. $(5 + 3)2$; 16
- ___ 9. Name the property of addition shown by $3 + 0 = 3$.
a. Associative
b. Commutative
c. Distributive
d. Identity

Identify the next three terms in each sequence.

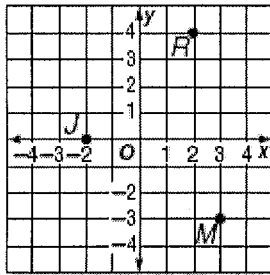
- ___ 10. 4, 8, 12, 16, ...
a. 18, 20, 21
b. 18, 22, 26
c. 20, 24, 28
d. 32, 48, 64
- ___ 11. 1, 7, 13, 19,
a. 133, 931, 6517
b. 26, 33, 40
c. 25, 31, 37
d. 19, 25, 31

- ___ 12. Evaluate $|3|$.
 a. -3 c. 3
 b. 0 d. 6
- ___ 13. Evaluate $|-9|$.
 a. 18 c. 0
 b. 9 d. -9
- ___ 14. Write the integers represented by S and T on the number line.



- a. $S, 4; T, -2$ c. $S, -4; T, 2$
 b. $S, 2; T, -4$ d. $S, -2; T, 4$
- ___ 15. **OCEANOGRAPHY** A turtle dives towards deeper water at a rate of 8 inches per second. It continues for a total of 15 seconds. Which expression represents this situation?
 a. $15(-8)$ c. $15 \div 8$
 b. $-15(-8)$ d. $15 \div (-8)$
- ___ 16. What value of z makes $14 - 3 = z$ a true sentence?
 a. 17 c. -11
 b. 11 d. -17

Use the graph to name the ordered pair for each point.



- ___ 17. J
 a. $(0, -2)$ c. $(0, 2)$
 b. $(-2, 0)$ d. $(2, 0)$
- ___ 18. M
 a. $(-3, 3)$ c. $(3, 3)$
 b. $(-3, -3)$ d. $(3, -3)$
- ___ 19. **MONEY** Marisa has \$26 in her purse. She pays \$5 for lunch. Which expression represents this situation?
 a. $-26 + (-5)$ c. $26 + (-5)$
 b. $-26 + 5$ d. $26 + 5$

Add, subtract, multiply, or divide.

- ___ 20. $8 + (-7)$
 a. 15 c. -1
 b. 1 d. -15
- ___ 21. $-7(-6)$
 a. 42 c. -13
 b. -1 d. -42

- _____ 22. $18 \div (-9)$
a. 9
b. 2
c. -2
d. -9
- _____ 23. $35 - 12$
a. 47
b. 23
c. -23
d. -47
- _____ 24. $(-3)^2$
a. -9
b. -6
c. -1
d. 9

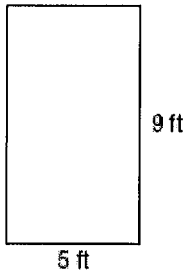
Evaluate each expression if $a = -4$, $b = 6$, and $c = -1$.

- _____ 25. $10 - a$
a. -6
b. 6
c. 14
d. -14
- _____ 26. bc
a. 6
b. -6
c. 5
d. -5
- _____ 27. $\frac{-12}{b}$
a. -18
b. -6
c. -2
d. 2
- _____ 28. $9 + b$
a. 54
b. -3
c. 3
d. 15
- _____ 29. **WORLD RECORDS** To break a world record, a chess player played at average of 1 game every 3 minutes. At this rate, about how many games did he play in 45 minutes?
a. 9 games
b. 15 games
c. 30 games
d. 135 games

Solve each equation. Check your solution.

- _____ 30. $9 + n = -2$
a. -11
b. -7
c. 2
d. 7
- _____ 31. $14 = y - 10$
a. -24
b. -4
c. 4
d. 24
- _____ 32. $t - 26 = -21$
a. -47
b. -5
c. 5
d. 47
- _____ 33. $84 = 7d$
a. 8
b. 12
c. 77
d. 91
- _____ 34. $6z = 12$
a. 2
b. 6
c. 18
d. 72

35. Find the perimeter of the figure.



- a. 45 ft
b. 28 ft
c. 16 ft
d. 14 ft

36. **DRIVEWAYS** Find the area of a rectangular driveway with a length of 10 meters and a width of 3 meters.

- a. 49 m^2
b. 30 m^2
c. 26 m^2
d. 13 m^2

Choose the correct algebraic expression for each phrase.

37. s decreased by 10

- a. $s + 10$
b. $s - 10$
c. $10 - s$
d. $10 + s$

38. thirteen times y

- a. $y + 13$
b. $13y$
c. $13 + y$
d. $y - 13$

39. twelve more than z

- a. $12z$
b. $12 - z$
c. $z + 12$
d. $12 \div z$

Choose the correct algebraic equation for each sentence.

40. Twenty is a number minus 5.

- a. $20 = 5 - r$
b. $20 = r - 5$
c. $20r = -5$
d. $20 = r + 5$

41. $-8x + 3 = -29$

- a. 256
b. 4
c. 3
d. -40

42. $3x + 1 = -11$

- a. -36
b. -30
c. -4
d. -3

43. Find the GCF of $12t$ and $18t$.

- a. $6t$
b. $3t$
c. 6
d. 3

44. Write $\frac{4}{5}$ as a decimal.

- a. 8.0
b. $0.\bar{8}$
c. 0.8
d. 0.08

- _____ 45. **SHOPPING** Coats are on sale for 23% off. Write 23% as a decimal.
 a. 0.023 c. 2.3
 b. 0.23 d. 23
- _____ 46. Which is 0.25 written as a percent?
 a. $\frac{1}{4}\%$ c. 25%
 b. 2.5% d. 250%
- _____ 47. Write 0.125 as a fraction in simplest form.
 a. $\frac{1}{8}$ c. $\frac{1}{5}$
 b. $\frac{1}{6}$ d. $\frac{3}{8}$
- _____ 48. Write $\frac{3}{5}$ as a percent.
 a. 3.5% c. 35%
 b. 6% d. 60%
- _____ 49. Write 75% as a fraction in simplest form.
 a. $\frac{4}{5}$ c. $\frac{1}{4}$
 b. $\frac{3}{4}$ d. $\frac{1}{5}$

Replace each ● to make a true sentence.

- _____ 50. $\frac{13}{28}$ ● $\frac{17}{30}$
 a. > c. =
 b. < d. ×
- _____ 51. $\frac{7}{12}$ ● $\frac{5}{9}$
 a. > c. =
 b. < d. ÷
- _____ 52. Find the least fraction.
 a. $\frac{15}{16}$ c. $\frac{9}{10}$
 b. $\frac{4}{5}$ d. $\frac{7}{8}$
- _____ 53. Estimate $8\frac{13}{16} - 5\frac{1}{3}$
 a. 5 c. 3
 b. 4 d. 2
- _____ 54. Estimate $12\frac{2}{5} \div 3\frac{1}{8}$
 a. 5 c. 3
 b. 4 d. 2

Add, subtract, multiply, or divide. Write in simplest form.

_____ 55. $11\frac{5}{7} + 8\frac{1}{7}$

a. $18\frac{6}{7}$

c. 20

b. $19\frac{6}{7}$

d. $20\frac{1}{7}$

_____ 56. $\frac{3}{12} \times \frac{4}{21}$

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

c. $\frac{12}{252}$

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

d. $\frac{1}{21}$

_____ 57. $3\frac{5}{9} - 2\frac{1}{3}$

a. $\frac{2}{9}$

c. $1\frac{2}{9}$

b. $1\frac{4}{27}$

d. $1\frac{2}{3}$

_____ 58. $7\frac{3}{4} \div \frac{1}{2}$

a. $96\frac{7}{8}$

c. $8\frac{1}{4}$

b. $15\frac{1}{2}$

d. $7\frac{3}{4}$

Solve each equation. Check your solution.

_____ 59. $\frac{1}{2}l = 2$

a. 4

c. $\frac{1}{4}$

b. 1

d. 0

_____ 60. $10 = \frac{x}{5}$

a. 2

c. 15

b. 5

d. 50

_____ 61. $\frac{3}{4}n = 1$

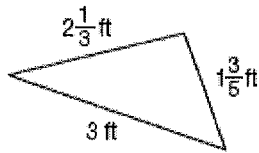
a. $\frac{1}{4}$

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

b. $\frac{1}{2}$

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

62. **GEOMETRY** Find the perimeter of the figure.



- a. $6\frac{3}{15}$ ft c. $7\frac{1}{15}$ ft
b. $6\frac{14}{15}$ ft d. $7\frac{11}{15}$ ft

63. Write the ratio 21 inches to 3 feet as a fraction in simplest form.

- a. $\frac{1}{7}$ c. $\frac{21}{36}$
b. $\frac{7}{12}$ d. $\frac{5}{7}$

64. Are the ratios 85 tables to 18 chairs and 17 tables to 3 chairs equivalent? Explain.

- a. Yes; $\frac{85}{18} = \frac{17}{3}$. c. No; $\frac{85}{18} = \frac{17}{6}$.
b. Yes; $\frac{18}{35} = \frac{17}{3}$. d. No; $\frac{85}{18}$ is in simplest form.

65. Find the rate of \$17.40 for 12 pairs of shoelaces as a unit rate.

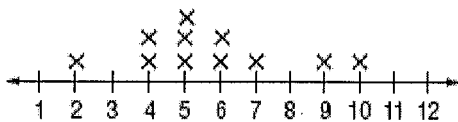
- a. \$2.09 per pair c. \$1.37 per pair
b. \$1.45 per pair d. \$0.69 per pair

66. 732 mm = _____ m

- a. 0.732 c. 73.2
b. 7.32 d. 732,000

READING Use the line plot.

Number of Fiction Books Read



67. What is the range of data?

- a. 10 c. 5
b. 8 d. 3

68. What is the mode of the data?

- a. 10 c. 5
b. 9 d. 3

69. How many students read more than 4 books?

- a. 3 c. 8
b. 5 d. 10

WEATHER Use the table. It shows the monthly average rainfall in Phoenix, Arizona.

Average Rainfall (mm)					
21	21	30	7	5	3
21	30	23	14	18	29

- ____ 70. Find the mean.
- a. 18.5 mm c. 27 mm
b. 21 mm d. 222 mm
- ____ 71. Find the median.
- a. 18 mm c. 21 mm
b. 18.5 mm d. 27 mm
- ____ 72. Find the mode.
- a. 18.5 mm c. 27 mm
b. 21 mm d. 30 mm

Use the stem-and-leaf plot.

Stem	Leaf
1	0 1 3 7
2	1 4 7
3	2

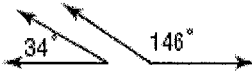
$2|4 = 24$

- ____ 73. The stem-and-leaf plot represents which of the following data?
- a. 13 17 10 21 24 32 27 11 c. 0 1 3 7 1 4 7 2
b. 11 21 24 10 27 13 32 d. 17 13 17 32 27 1 24 21
- ____ 74. What is the range of the data?
- a. 10–32 c. 19
b. 2 d. 22
- ____ 75. Use the data set \$8, \$10, \$15, \$8, \$12, \$13, \$8 and \$11. Which measure of central tendency would you use to convince people your prices are low?
- a. none of these c. median
b. mean d. mode
- ____ 76. If you can choose a meat, a vegetable, and a beverage from 3 kinds of meat, 2 kinds of vegetables, and 4 kinds of beverages, how many different combinations can you have?
- a. 9 c. 24
b. 10 d. 48
- ____ 77. A bag contains 3 orange, 5 black, and 2 white marbles. Two marbles are drawn, but the first marble is not replaced. Find $P(\text{white, then black})$.
- a. $\frac{5}{9}$ c. $\frac{1}{10}$
b. $\frac{1}{9}$ d. $\frac{1}{15}$
- ____ 78. The measure of an angle is 45° . Classify the angle.
- a. acute c. obtuse
b. straight d. right

- ___ 79. **ALGEBRA** If $\angle P$ and $\angle Q$ are complementary and the measure of $\angle P$ is 40° , what is the measure of $\angle Q$?
- a. 40° c. 60°
b. 50° d. 140°

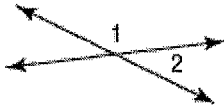
Classify each pair of angles.

___ 80.



- a. complementary c. right
b. supplementary d. no relationship

___ 81.



- a. complementary c. right
b. supplementary d. no relationship

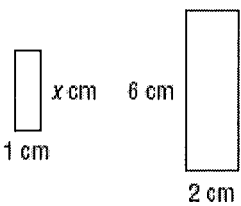
___ 82. Which figure is a polygon?

- a. c.
- b. d.

___ 83. Which figure is a regular polygon?

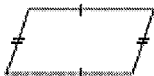
- a. c.
- b. d.

___ 84. Find the value of x in the pair of similar figures.



- a. 4 c. 2
b. 3 d. 1

___ 85. Classify the quadrilateral using the name that *best* describes it.



- a. square c. trapezoid
b. parallelogram d. rhombus

86. Classify the triangle by its angles and by its sides.



- a. acute, equilateral
- b. right, equilateral
- c. obtuse, isosceles
- d. obtuse, equilateral

87. Classify the quadrilateral using the name that *best* describes it.



- a. rhombus
- b. rectangle
- c. square
- d. trapezoid

88. Which regular polygon can be used by itself to make a tessellation?

- a. pentagon
- b. octagon
- c. square
- d. decagon

89. Choose the figure that shows all lines of symmetry drawn correctly.

- a.
- b.
- c.
- d.

90. **ART** An artist is using right triangles in her design. If all the triangles have an angle measure of 24° , what is the measure of the third angle?

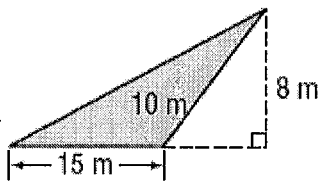
- a. 66°
- b. 76°
- c. 106°
- d. 156°

91. **POOLS** A rectangular pool is 6 feet long by 4 feet wide and 6 inches deep. What is the volume of the pool?

- a. 12 ft^3
- b. 144 ft^3
- c. 168 ft^3
- d. 296 ft^3

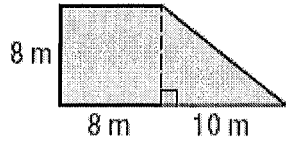
Find the area of each figure. Round to the nearest tenth if necessary.

92.



- a. 47 m^2
- b. 60 m^2
- c. 75 m^2
- d. 165 m^2

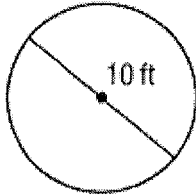
___ 93.



- a. 56 m^2
- b. 104 m^2
- c. 144 m^2
- d. $2,560 \text{ m}^2$

Find the circumference of each circle. Use 3.14 for π . Round to the nearest tenth.

___ 94.

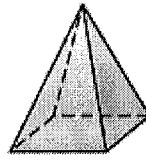


- a. 15.7 ft
- b. 31.4 ft
- c. 62.8 ft
- d. 314 ft

___ 95. radius = 6.7 mm

- a. 2.1 mm
- b. 21.0 mm
- c. 42.1 mm
- d. 66.1 mm

___ 96. Identify the shape of the base of the figure.



- a. circle
- b. square
- c. triangle
- d. (no base)

Name _____

96 Questions – To answer, write the letter of your choice on the blank for each question.

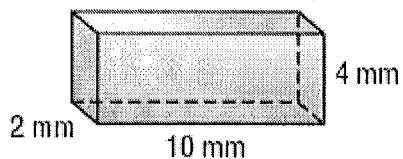
*** Do all work on a separate sheet of paper and attach to this answer sheet to turn in to 8th grade teacher.**

- | | | | | |
|-----------|-----------|-----------|-----------|-----------|
| _____ 1. | _____ 22. | _____ 43. | _____ 64. | _____ 85. |
| _____ 2. | _____ 23. | _____ 44. | _____ 65. | _____ 86. |
| _____ 3. | _____ 24. | _____ 45. | _____ 66. | _____ 87. |
| _____ 4. | _____ 25. | _____ 46. | _____ 67. | _____ 88. |
| _____ 5. | _____ 26. | _____ 47. | _____ 68. | _____ 89. |
| _____ 6. | _____ 27. | _____ 48. | _____ 69. | _____ 90. |
| _____ 7. | _____ 28. | _____ 49. | _____ 70. | _____ 91. |
| _____ 8. | _____ 29. | _____ 50. | _____ 71. | _____ 92. |
| _____ 9. | _____ 30. | _____ 51. | _____ 72. | _____ 93. |
| _____ 10. | _____ 31. | _____ 52. | _____ 73. | _____ 94. |
| _____ 11. | _____ 32. | _____ 53. | _____ 74. | _____ 95. |
| _____ 12. | _____ 33. | _____ 54. | _____ 75. | _____ 96. |
| _____ 13. | _____ 34. | _____ 55. | _____ 76. | |
| _____ 14. | _____ 35. | _____ 56. | _____ 77. | |
| _____ 15. | _____ 36. | _____ 57. | _____ 78. | |
| _____ 16. | _____ 37. | _____ 58. | _____ 79. | |
| _____ 17. | _____ 38. | _____ 59. | _____ 80. | |
| _____ 18. | _____ 39. | _____ 60. | _____ 81. | |
| _____ 19. | _____ 40. | _____ 61. | _____ 82. | |
| _____ 20. | _____ 41. | _____ 62. | _____ 83. | |
| _____ 21. | _____ 42. | _____ 63. | _____ 84. | |

Rising 8th Grade Summer Math Packet for Algebra and Algebra Transition
PART 2 (please transfer your answers to the answer sheet located at the end)
NO CALCULATOR

- ___ 1. Estimate $\sqrt{37}$ to the nearest whole number.
- | | |
|------|------|
| a. 9 | c. 7 |
| b. 8 | d. 6 |

- ___ 2. Find the surface area of the rectangular prism.



- | | |
|-----------------------|----------------------|
| a. 136 mm^2 | c. 68 mm^2 |
| b. 80 mm^2 | d. 32 mm^2 |
- ___ 3. Find the surface area of a cube with 9-centimeter edges.
- | | |
|-----------------------|-----------------------|
| a. 81 cm^2 | c. 324 cm^2 |
| b. 108 cm^2 | d. 486 cm^2 |

- ___ 4. What is the value of the expression $x - 14$ when $x = 42$?
- | | |
|-------|-------|
| a. 16 | c. 32 |
| b. 28 | d. 56 |

- ___ 5. Which variable expression represents the phrase "the sum of a number and 11"?
- | | |
|-------------|-------------------|
| a. $n + 11$ | c. $11n$ |
| b. $n - 11$ | d. $\frac{n}{11}$ |

- ___ 6. Which expression is equal to $4 \cdot 4 \cdot 4$?
- | |
|-----------------|
| a. 3×4 |
| b. 3^4 |
| c. 4^3 |
| d. 4^4 |

- ___ 7. Evaluate the expression y^3 when $y = 5$.
- | | |
|-------|--------|
| a. 15 | c. 75 |
| b. 30 | d. 125 |

- ___ 8. What is the value of $16 + 20 \div 4 + 1$?
- | | |
|-------|-------|
| a. 8 | c. 20 |
| b. 10 | d. 22 |

- ___ 9. Evaluate the expression $5s + t$ when $s = 2$ and $t = 6$.
- | | |
|-------|-------|
| a. 16 | c. 58 |
| b. 32 | d. 60 |

- ___ 10. Which list of integers is in order from least to greatest?
- a. 5, 2, -3, -6
 b. -3, -6, 2, 5
 c. -6, -3, 2, 5
 d. -6, 5, -3, 2

- ___ 11. Which expression has a value of 3?
- a. $-(3)$
 b. $-|3|$
 c. $|-3|$
 d. $-|-3|$

- ___ 12. Find the sum $-4 + (-21)$.
- a. -25
 b. -17
 c. 17
 d. 25

- ___ 13. Evaluate the expression $2 + k$ when $k = -7$.
- a. -9
 b. -5
 c. 5
 d. 9

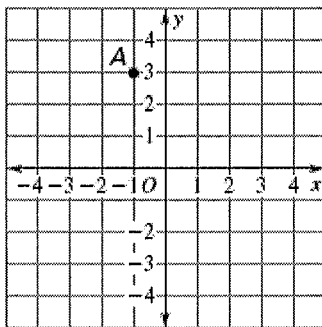
- ___ 14. Find the difference $-5 - 2$.
- a. -7
 b. -3
 c. 3
 d. 7

- ___ 15. Find the change in temperature from 1°F to -3°F .
- a. -4°F
 b. -2°F
 c. 2°F
 d. 4°F

- ___ 16. Which expression has a value of -10?
- a. $(-2)(-5)$
 b. $(2)(-5)$
 c. $\frac{-20}{-2}$
 d. $20 + (-10)$

- ___ 17. Which expression has a positive value?
- a. $(-2)(4)$
 b. $(-2)(-2)(-4)$
 c. $(-2)(2)(4)(4)$
 d. $(-2)(-2)(-4)(-4)$

- ___ 18. What are the coordinates of point A on the coordinate plane shown?



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

- ___ 19. In which quadrant is the point $(4, -1)$ located?
- Quadrant I
 - Quadrant II
 - Quadrant III
 - Quadrant IV
- ___ 20. Which equation illustrates the commutative property of addition?
- $3+0=3$
 - $7+8=15$
 - $5+9=9+5$
 - $(2+3)+10=2+(3+10)$
- ___ 21. Which expression is equivalent to $3(4c-6)$?
- $6c$
 - $7c-3$
 - $12c-18$
 - $12c-6$
- ___ 22. In which expression is 2 a constant term?
- $a+a$
 - $2a+3$
 - $2a+2a$
 - $3a+2$
- ___ 23. Which terms are like terms?
- a and b
 - $3s$ and $3t$
 - $4n$ and $7n$
 - 6 and $6y$
- ___ 24. Which equation represents the sentence "The product of 12 and p is 60."?
- $12+p=60$
 - $12p=60$
 - $12-p=60$
 - $\frac{12}{p}=60$
- ___ 25. Which question corresponds to the equation $\frac{x}{10}=2$?
- What number minus 10 equals 2?
 - What number divided by 10 equals 2?
 - The product of what number and 10 is 2?
 - The sum of what number and 10 is 2?
- ___ 26. What is the solution of $b-8=15$?
- 23
 - 7
 - 7
 - 23

_____ 27. What is the solution of $-3 + w = 15$?

- a. -18
- b. -12
- c. 12
- d. 18

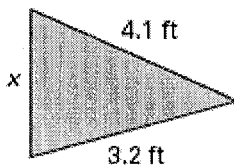
_____ 28. What is the solution of $\frac{5}{7} = 21$?

- a. 3
- b. 14
- c. 28
- d. 147

_____ 29. What is the solution of $-4a = 24$?

- a. -96
- b. -6
- c. 6
- d. 96

_____ 30. What is the value of x for the triangle shown with a perimeter of 10.1 feet?



- a. 2.8 ft
- b. 3.2 ft
- c. 3.8 ft
- d. 7.3 ft

_____ 31. What is the solution of the equation $2x - 18 = 30$?

- a. 6
- b. 24
- c. 33
- d. 96

_____ 32. What is the solution of the equation $\frac{k}{3} + 6 = 9$?

- a. 1
- b. 9
- c. 15
- d. 45

_____ 33. What is the solution of the equation $4(x + 2) = 28$?

- a. 5
- b. 6.5
- c. 7.5
- d. 9

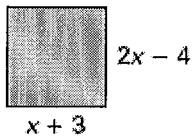
_____ 34. What is the solution of the equation $8 = 3b - 4 + b$?

- a. 1
- b. 2
- c. 3
- d. 6

_____ 35. What is the solution of the equation $2w + 4 = 3w - 14$?

- a. 2
- b. 3.6
- c. 10
- d. 18

_____ 36. Find the length of a side of the square.

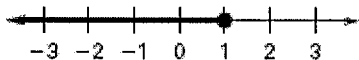


- a. 3 units
- b. 6 units
- c. 7 units
- d. 10 units

_____ 37. You can spend up to \$20 at the fair. Which inequality represents this situation?

- a. $m < 20$
- b. $m \leq 20$
- c. $m > 20$
- d. $m \geq 20$

_____ 38. Which inequality is represented by the graph?



- a. $x < 1$
- b. $x \leq 1$
- c. $x > 1$
- d. $x \geq 1$

_____ 39. What is the solution of $\frac{t}{2} > 12$?

- a. -24
- b. 6
- c. 15
- d. 28

_____ 40. Which inequality is equivalent to $-7x \leq 21$?

- a. $x \leq -3$
- b. $x \geq -3$
- c. $x \leq 3$
- d. $x \geq 3$

_____ 41. What is the solution of the inequality $2j - 5 > -15$?

- a. $j < -10$
- b. $j > -10$
- c. $j < -5$
- d. $j > -5$

_____ 42. Which is the perimeter of a rectangle with length 18 cm and width 8 cm?

- a. 26 cm
- b. 52 cm
- c. 104 cm
- d. 144 cm

_____ 43. Which expression is the prime factorization of 48?

- a. $3 \cdot 16$
- b. $3 \cdot 4^2$
- c. $2^4 \cdot 3$
- d. $2^2 \cdot 3 \cdot 4$

_____ 44. Which number is a prime number?

- a. 15
- b. 21
- c. 35
- d. 43

___ 45. What is the greatest common factor of 6 and 15?

- a. 1
- b. 2
- c. 3
- d. 6

___ 46. Which numbers are relatively prime?

- a. 2, 8
- b. 5, 20
- c. 8, 15
- d. 9, 18

___ 47. Which fraction is equivalent to $\frac{12}{20}$?

- a. $\frac{1}{2}$
- b. $\frac{3}{5}$
- c. $\frac{24}{35}$
- d. $\frac{25}{40}$

___ 48. Which fraction is *not* in simplest form?

- a. $\frac{4}{13}$
- b. $\frac{5}{8}$
- c. $\frac{6}{9}$
- d. $\frac{7}{10}$

___ 49. What is the least common multiple of 6 and 10?

- a. 2
- b. 16
- c. 30
- d. 60

___ 50. What is the LCD of $\frac{1}{3}$ and $\frac{5}{6}$?

- a. 3
- b. 6
- c. 9
- d. 18

___ 51. Find the product $3^2 \cdot 3^6$.

- a. 3^3
- b. 3^4
- c. 3^8
- d. 3^{12}

___ 52. Find the quotient $\frac{(0.2)^7}{(0.2)^4}$.

- a. $(0.2)^3$
- b. $(0.2)^4$
- c. $(0.2)^{11}$
- d. $(0.2)^{28}$

___ 53. Which expression is equivalent to $\frac{5x^3}{10x^4}$?

- a. $\frac{1}{2x}$
- b. $\frac{x}{2}$
- c. $\frac{2}{x}$
- d. $2x$

- ___ 54. Which expression is equivalent to $x^5 \cdot y^{-2}$?
- a. $\frac{1}{(xy)^{10}}$ c. $\frac{y^2}{x^5}$
b. $\frac{x^5}{y^{-2}}$ d. $\frac{x^5}{y^2}$
- ___ 55. The distance between the Earth and the Sun is about 93,000,000 miles. What is this distance in scientific notation?
- a. 9.3×10^{-7} c. 9.3×10^6
b. 9.3×10^{-6} d. 9.3×10^7
- ___ 56. What is 3.5×10^{-6} in standard form?
- a. -35,000,000 c. 0.0000035
b. -3,500,000 d. 0.00000035
- ___ 57. Which shows 600,000 using a power of 10?
- a. 6×10 c. 6×10^5
b. 6×10^4 d. 6×10^6
- ___ 58. Which shows $(6.1 \times 10^2) \times (3.1 \times 10^5)$?
- a. 1.891×10^3 c. 1.891×10^7
b. 1.891×10^5 d. 1.891×10^8
- ___ 59. Which decimal is equivalent to $\frac{2}{3}$?
- a. 0.6 c. 0.67
b. $0.\bar{6}$ d. 0.7
- ___ 60. Which number is greater than 1.5?
- a. -2 c. $1.\bar{5}$
b. $1\frac{1}{3}$ d. $1\frac{2}{5}$
- ___ 61. Which equation can be used as a counterexample to "the sum of any number and 2 is an even number"?
- a. $5 + 2 = 7$ c. $2 + 2 = 4$
b. $6 + 2 = 8$ d. $-1 + 3 = 2$
- ___ 62. Find the difference $\frac{3}{7} - \frac{9}{7}$.
- a. $-1\frac{5}{7}$ c. $\frac{6}{7}$
b. $-\frac{6}{7}$ d. $1\frac{5}{7}$

___ 63. Simplify the expression $\frac{4x}{5} - \frac{2x}{5}$.

a. $2x$

c. $\frac{2x}{5}$

b. 2

d. $\frac{x}{5}$

___ 64. A walking trail is $\frac{7}{10}$ mile long. You have walked $\frac{3}{5}$ mile from the start. How much farther do you have to walk to reach the end?

a. $\frac{1}{10}$ mile

c. $\frac{2}{5}$ mile

b. $\frac{3}{10}$ mile

d. $\frac{4}{5}$ mile

___ 65. Find the sum $-1\frac{1}{6} + 2\frac{3}{4}$.

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

c. $1\frac{1}{2}$

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

d. $1\frac{7}{12}$

___ 66. Find the product $-\frac{3}{4} \cdot \left(-\frac{8}{9}\right)$.

a. $-\frac{27}{32}$

c. $\frac{2}{3}$

b. $-\frac{2}{3}$

d. $\frac{27}{32}$

___ 67. Find the product $-3\frac{1}{3} \cdot 6\frac{3}{4}$.

a. -45

c. $-19\frac{1}{12}$

b. $-22\frac{1}{2}$

d. $-18\frac{1}{4}$

___ 68. Find the quotient $\frac{7}{8} \div \frac{5}{2}$.

a. $\frac{7}{20}$

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

b. $\frac{16}{35}$

d. $2\frac{6}{7}$

___ 69. What is the reciprocal of -3 ?

a. $-\frac{1}{3}$

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

b. 1

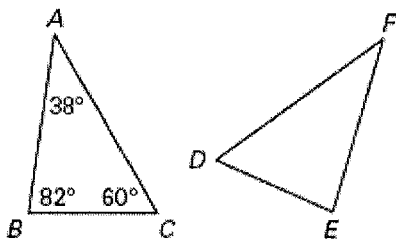
d. 3

- ___ 70. What is the solution of the equation $-\frac{2}{3}x = 42$?
- a. -126
b. -63
c. -28
d. -24
- ___ 71. What is the solution of the equation $0.02x + 0.16 = 0.24$?
- a. 0.04
b. 0.02
c. 2
d. 4
- ___ 72. What is the solution of the inequality $\frac{1}{9}p + \frac{1}{3} \geq \frac{8}{9}$?
- a. $p \geq \frac{5}{81}$
b. $p \geq \frac{11}{81}$
c. $p \geq 5$
d. $p \geq 11$
- ___ 73. Which is the distance from points $\frac{2}{3}$ and $-\frac{1}{3}$ on a number line?
- a. $\frac{1}{3}$
b. $\frac{2}{3}$
c. 1
d. $1\frac{1}{3}$
- ___ 74. Evaluate $-\frac{5}{6} + \frac{7}{12} + \frac{5}{6}$.
- a. $\frac{7}{12}$
b. $\frac{5}{6}$
c. $1\frac{2}{3}$
d. $2\frac{1}{4}$
- ___ 75. An insect is traveling at a rate of 40 cm per minute. About how many inches per minute does it travel?
- a. 12 inches per minute
b. 16 inches per minute
c. 37 inches per minute
d. 102 inches per minute
- ___ 76. What is the solution of the proportion $\frac{3}{8} = \frac{x}{40}$?
- a. 5
b. 8
c. 11
d. 15
- ___ 77. What is the solution of the proportion $\frac{5}{k} = \frac{9}{18}$?
- a. 2.5
b. 3.6
c. 10
d. 90

___ 78. If you can buy 5 pounds of pasta for \$8, how many pounds of pasta can you buy for \$20?

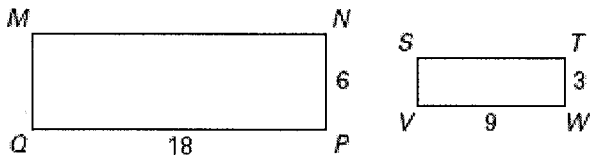
- a. 1.6 pounds
- b. 12.5 pounds
- c. 32 pounds
- d. 40 pounds

___ 79. Given $\triangle ABC \cong \triangle DEF$, what is the measure of $\angle F$?



- a. 38°
- b. 45°
- c. 60°
- d. 82°

___ 80. The rectangles shown are similar. What is the ratio of the lengths of the corresponding sides of $MNPQ$ to $STWV$?



- a. $\frac{1}{3}$
- b. $\frac{1}{2}$
- c. 2
- d. 3

___ 81. At baseball practice, you made a hit 5 times out of 20 times at bat. Using experimental probability, predict the number of times you would make a hit out of 60 times at bat.

- a. 15 times
- b. 24 times
- c. 36 times
- d. 40 times

___ 82. What is $\frac{4}{10}$ as a percent?

- a. 4%
- b. 14%
- c. 40%
- d. 44%

___ 83. What is 75% as a fraction in simplest form?

- a. $\frac{1}{75}$
- b. $\frac{1}{4}$
- c. $\frac{1}{3}$
- d. $\frac{3}{4}$

___ 84. What number is 10% of 20?

- a. 2
- b. 5
- c. 10
- d. 12

___ 85. What is $\frac{4}{5}$ as a percent?

- a. 45%
- b. 80%
- c. 85%
- d. 125%

___ 86. How much is a 15% tip on a \$35 meal?

- a. \$4.20
- b. \$4.90
- c. \$5.00
- d. \$5.25

___ 87. What is $\sqrt{60}$ to the nearest integer?

- a. 5
- b. 6
- c. 7
- d. 8

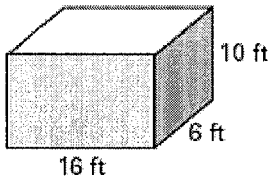
___ 88. A circle has a radius of 6 inches. What is its approximate circumference?

- a. 9 in.
- b. 19 in.
- c. 38 in.
- d. 113 in.

___ 89. A circle has an area of 50 square millimeters. What is its approximate radius?

- a. 4 mm
- b. 8 mm
- c. 16 mm
- d. 25 mm

___ 90. What is the surface area of the prism?



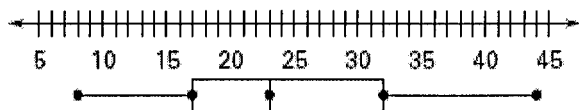
- a. 512 ft^2
- b. 632 ft^2
- c. 752 ft^2
- d. 960 ft^2

___ 91. You are organizing the following data values in a stem-and-leaf plot. What should the key be for the display?

23, 42, 56, 19, 41

- a. $2|3 = 2.3$
- b. $2|3 = 23$
- c. $23| = 23$
- d. $23|0 = 230$

___ 92. Which statement about the box-and-whisker plot shown is true?



- a. The median is 44.
- b. The interquartile range is 23.
- c. Half of the data values lie between 17 and 32.
- d. Half of the data values are greater than 32

93. You have 4 model cars and want to display 3 of them on a shelf. How many arrangement are possible?
- a. 4 b. 12 c. 24 d. 64

94. Which shows the comparison of the median for the number of hours spent exercising each week for 5 boys and 5 girls?

Boys	6	15	8	12	7
Girls	10	2	3	9	4

- a. The median for boys is twice as much as the median for girls. c. The median for girls is twice as much as the median for boys.
- b. The medians are the same. d. The median for boys is three times as much as the median for girls.

95. How many females were surveyed?

	Yes	No
Male	67	125
Female	39	88

- a. 39 b. 88 c. 127 d. 213

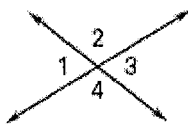
96. You randomly choose a number from 1 through 10. What is the probability that you choose an odd number or a number greater than 6?

- a. $\frac{1}{5}$ b. $\frac{3}{5}$ c. $\frac{7}{10}$ d. $\frac{9}{10}$

97. There are 2 red markers and 3 blue markers in a drawer. Without looking, you select a marker, keep it out, and select another marker. What is the probability that both markers are blue?

- a. $\frac{3}{10}$ b. $\frac{6}{25}$ c. $\frac{9}{20}$ d. $\frac{9}{25}$

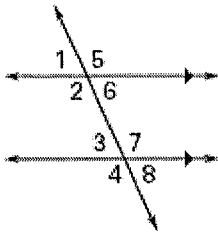
98. In the diagram, $m\angle 1 = 75^\circ$. What is $m\angle 3$?



- a. 15°
 b. 75°
 c. 105°
 d. 165°
99. If $\angle 1$ and $\angle 2$ are supplementary angles, what could their measures be?

- a. $m\angle 1 = 30^\circ$ c. $m\angle 1 = 50^\circ$
 $m\angle 2 = 30^\circ$ $m\angle 2 = 130^\circ$
 b. $m\angle 1 = 40^\circ$ d. $m\angle 1 = 60^\circ$
 $m\angle 2 = 50^\circ$ $m\angle 2 = 140^\circ$

Use the diagram.



___ 100. Which angles are alternate interior angles?

- a. $\angle 1$ and $\angle 8$
- b. $\angle 2$ and $\angle 4$

- c. $\angle 5$ and $\angle 2$
- d. $\angle 6$ and $\angle 3$

___ 101. Given that $m\angle 5 = 110^\circ$, what is $m\angle 7$?

a. 20°

b. 70°

c. 110°

d. 145°

___ 102. What is the measure of an interior angle of a regular pentagon?

a. 72°

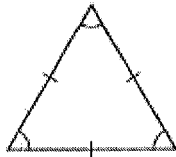
b. 108°

c. 120°

d. 180°

___ 103. Which polygon can be used to make a tessellation if it is the only shape used?

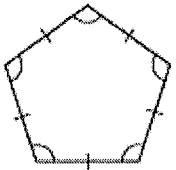
a.



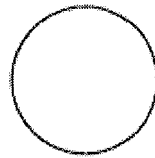
c.



b.



d.



___ 104. How many lines of symmetry does the figure have?



a. 1

b. 2

c. 3

d. 4

Name _____

104 Questions – To answer, write the letter of your choice on the blank for each question.

Show work on a separate sheet of paper and attach to this answer sheet to give to 8th grade teacher.

- | | | | | |
|-----------|-----------|-----------|-----------|------------|
| _____ 1. | _____ 22. | _____ 43. | _____ 64. | _____ 85. |
| _____ 2. | _____ 23. | _____ 44. | _____ 65. | _____ 86. |
| _____ 3. | _____ 24. | _____ 45. | _____ 66. | _____ 87. |
| _____ 4. | _____ 25. | _____ 46. | _____ 67. | _____ 88. |
| _____ 5. | _____ 26. | _____ 47. | _____ 68. | _____ 89. |
| _____ 6. | _____ 27. | _____ 48. | _____ 69. | _____ 90. |
| _____ 7. | _____ 28. | _____ 49. | _____ 70. | _____ 91. |
| _____ 8. | _____ 29. | _____ 50. | _____ 71. | _____ 92. |
| _____ 9. | _____ 30. | _____ 51. | _____ 72. | _____ 93. |
| _____ 10. | _____ 31. | _____ 52. | _____ 73. | _____ 94. |
| _____ 11. | _____ 32. | _____ 53. | _____ 74. | _____ 95. |
| _____ 12. | _____ 33. | _____ 54. | _____ 75. | _____ 96. |
| _____ 13. | _____ 34. | _____ 55. | _____ 76. | _____ 97. |
| _____ 14. | _____ 35. | _____ 56. | _____ 77. | _____ 98. |
| _____ 15. | _____ 36. | _____ 57. | _____ 78. | _____ 99. |
| _____ 16. | _____ 37. | _____ 58. | _____ 79. | _____ 100. |
| _____ 17. | _____ 38. | _____ 59. | _____ 80. | _____ 101. |
| _____ 18. | _____ 39. | _____ 60. | _____ 81. | _____ 102. |
| _____ 19. | _____ 40. | _____ 61. | _____ 82. | _____ 103. |
| _____ 20. | _____ 41. | _____ 62. | _____ 83. | _____ 104. |
| _____ 21. | _____ 42. | _____ 63. | _____ 84. | |