

Rising Eighth Grade -- Summer Math Practice
(for students entering GEOMETRY)

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 3 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 Geometry

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

- _____ 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

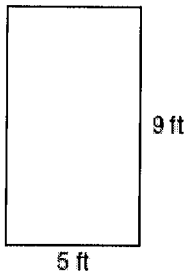
Evaluate each expression if $a = -4$, $b = 6$, and $c = -1$.

- _____ 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. $y \div 13$
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. $\frac{1}{2}t = 2$

a. 4

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

b. 1

d. 0

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

a. 2

c. 15

b. 5

d. 50

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

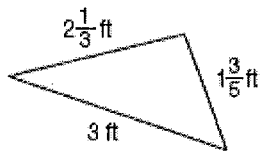
a. $\frac{1}{4}$

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.

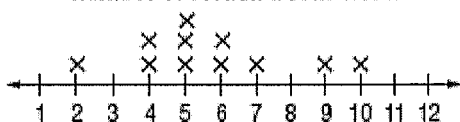
- a. \$2.09 per pair c. \$1.37 per pair
 b. \$1.45 per pair d. \$0.69 per pair

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?

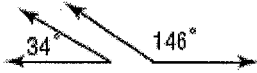
- a. 3 c. 8
 b. 5 d. 10

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°
- b. 50°
- c. 60°
- d. 140°

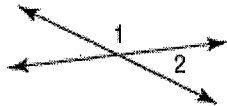
Classify each pair of angles.

80.



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

81.



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

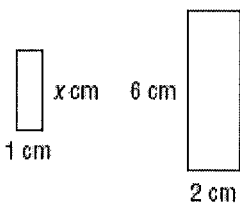
82. Which figure is a polygon?

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

83. Which figure is a regular polygon?

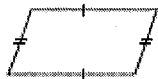
- a.
- b.
- c.
- d.

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



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

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



- a. square
- b. parallelogram
- c. trapezoid
- 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?

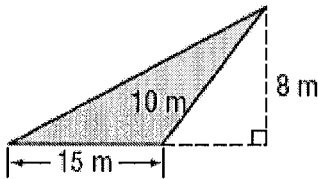
- a. 66°
- b. 76°
- c. 106°
- d. 156°

___ 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

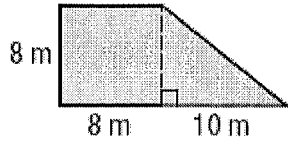
Find the area of each figure. Round to the nearest tenth if necessary.

___ 92.



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

93.

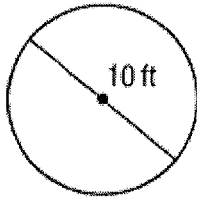


- a. 56 m^2
- b. 104 m^2

- 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

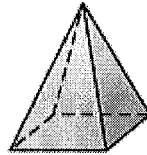
95. radius = 6.7 mm

- 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. | |

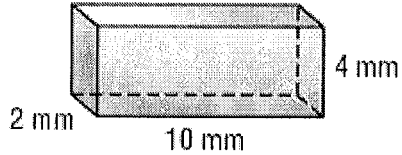
Rising 8th Grade Summer Math Packet for Geometry

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
b. 8
c. 7
d. 6

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



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

- ___ 4. What is the value of the expression $x - 14$ when $x = 42$?

- a. 16
b. 28
c. 32
d. 56

- ___ 5. Which variable expression represents the phrase "the sum of a number and 11"?

- a. $n + 11$
b. $n - 11$
c. $11n$
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
b. 30
c. 75
d. 125

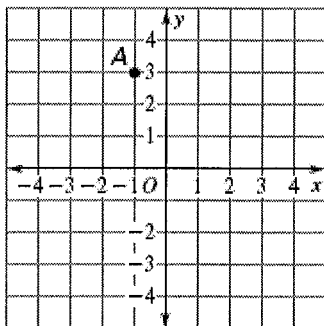
- ___ 8. What is the value of $16 + 20 \div 4 + 1$?

- a. 8
b. 10
c. 20
d. 22

- ___ 9. Evaluate the expression $5s + t$ when $s = 2$ and $t = 6$.

- a. 16
b. 32
c. 58
d. 60

- ___ 10. Which list of integers is in order from least to greatest?
- a. 5, 2, -3, -6 c. -6, -3, 2, 5
b. -3, -6, 2, 5 d. -6, 5, -3, 2
- ___ 11. Which expression has a value of 3?
- a. $-(3)$ c. $|-3|$
b. $-|3|$ d. $-|-3|$
- ___ 12. Find the sum $-4 + (-21)$.
- a. -25 c. 17
b. -17 d. 25
- ___ 13. Evaluate the expression $2 + k$ when $k = -7$.
- a. -9 c. 5
b. -5 d. 9
- ___ 14. Find the difference $-5 - 2$.
- a. -7 c. 3
b. -3 d. 7
- ___ 15. Find the change in temperature from 1°F to -3°F .
- a. -4°F c. 2°F
b. -2°F d. 4°F
- ___ 16. Which expression has a value of -10 ?
- a. $(-2)(-5)$ c. $\frac{-20}{-2}$
b. $(2)(-5)$ 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. $(-1, -3)$ c. $(3, -1)$
b. $(-1, 3)$ d. $(3, 1)$

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

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

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

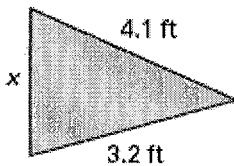
___ 28. What is the solution of $\frac{s}{7} = 21$?

- 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

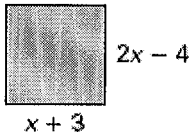
___ 34. What is the solution of the equation $8 = 3b - 4 + b$?

- 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

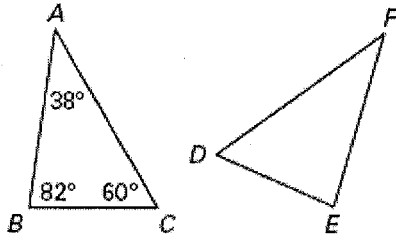
d. 3

- ___ 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?

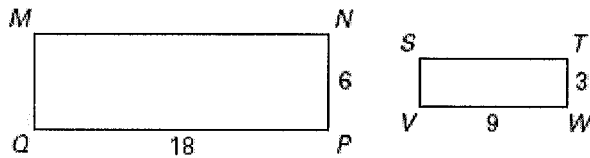
- a. 1.6 pounds
- b. 12.5 pounds
- c. 32 pounds
- d. 40 pounds

___ 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

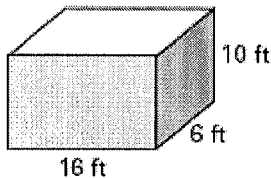
___ 88. A circle has a radius of 6 inches. What is its approximate circumference?

- 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?



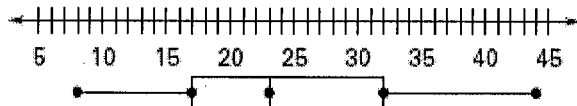
- a. 512 ft^2
- b. 632 ft^2
- c. 752 ft^2
- d. 960 ft^2

___ 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 arrangements 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

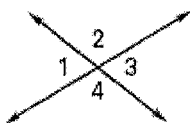
- a. The median for boys is twice as much as the median for girls.
- b. The medians are the same.
- c. The median for boys is twice as much as the median for girls.
- d. The median for boys is three times as much as the median for girls.
95. How many females were surveyed?

	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. $\frac{9}{10}$

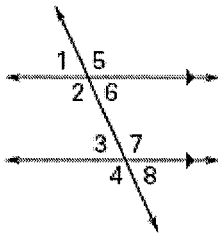
97. There are 2 red markers and 3 blue markers in a drawer. Without looking, you select a marker, keep it out, and select another marker. What is the probability that both markers are blue?
- a. $\frac{3}{10}$ b. $\frac{6}{25}$ c. $\frac{9}{20}$ d. $\frac{9}{25}$

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

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 $m\angle 7$?

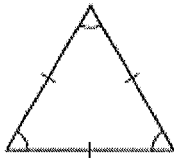
- a. 20°
- b. 70°
- c. 110°
- d. 145°

___ 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?

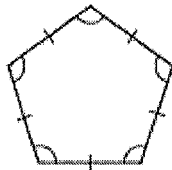
a.



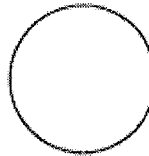
c.



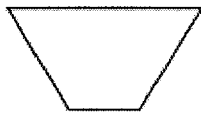
b.



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. | |

Rising 8th Grade Summer Math Packet for Geometry PART 3 NO CALCULATOR!

Define the following and **draw** an example of each.

Term	Definition	Diagram
Point		
Line		
Plane		
Segment		
Ray		
Perpendicular Lines		
Transversal		
Angle		
Vertex		

Define the following and **draw** an example of each.

Term	Definition	Diagram
Right Angle		
Acute Angle		
Obtuse Angle		
Straight Angle		
Triangle		
Right Triangle		
Acute Triangle		
Obtuse Triangle		
Scalene Triangle		

Define the following and **draw** an example of each.

Term	Definition	Diagram
Equilateral Triangle		
Equiangular Triangle		
Isosceles Triangle		
Triangle Sum Theorem		
Complementary Angles		
Supplementary Angles		
Vertical Angles		
Congruent Angles		
Congruent Sides		

Define the following and **draw** an example of each.

Term	Definition	Diagram
Congruent Figures		
Similar Figures		
Polygon		
Regular Polygon		
Quadrilateral		
Parallelogram		
Rectangle		
Square		
Rhombus		

Define the following and **draw** an example of each.

Term	Definition	Diagram
Trapezoid		
Pentagon		
Hexagon		
Heptagon		
Octagon		
Circle		
Center of a circle		
Diameter		
Radius		

Define the following and **draw** an example of each.

Term	Definition	Diagram
Chord		
Central Angle		
Arc		
Prism		
Pyramid		
Perimeter		
Circumference		
Area		

What is the sum of the interior angles of the following figures?

Figure	Sum of Interior Angles
Triangle	
Rectangle	
Square	
Parallelogram	

Solve for x .

1. $4x + 23 = 9x - 7$

2. $5x + 2(180 - x) = 300$

3. $2(x + 5) = 3(x - 2)$

Simplify.

4. $\sqrt{121}$

5. $\sqrt{24}$

6. $7\sqrt{300}$

7. $4\sqrt{2} + \sqrt{2}$

8. $8\sqrt{3} - 4\sqrt{3}$

9. $2\sqrt{3} \cdot \sqrt{32}$

10. $\sqrt{7}(3\sqrt{2} + \sqrt{16})$

11. $\sqrt{\frac{36}{225}}$

12. $\sqrt{\frac{3}{7}}$

13. $(3\sqrt{5})^2$

Simplify. Use positive exponents.

14. $y^3 \cdot y^5$

15. $(x^3)^8$

16. $(-6)^3$

17. $\frac{m^{10}}{m^4}$

18. $\frac{32x^3y^4z^9}{48x^{18}y^4z^2}$

Solve the linear system by using the substitution method.

19. $y = 2x + 5$

$3x - y = 4$

20. $x - 7y = 13$

$3x - 5y = 23$

21. $6x + 2y = 38$

$2x - 5y = -10$

Solve the linear system by using the elimination method.

22. $5x - y = 20$

$3x + y = 12$

23. $9x - 2y = 50$

$6x - 2y = 32$

24. $19 = 5x + 2y$

$1 = 3x - 4y$

25. $3x + 7y = 6$

$2x + 9y = 4$

Perform the given operation.

26. $(x^4 + 6x^2 + 7) + (2x^4 - 3x^2 + 1)$

27. $(7n^3 + 2n^2 - n - 4) - (4n^3 - 3n^2 + 8)$

Find the product.

28. $(x + 3)(2x + 3)$

29. $(3x - 1)(5x + 1)$

30. $(4x - 7)(5x - 2)$

31. $(5x + 2)(4x^2 + 8x - 7)$

32. $(3x^2 + x - 5)(9x - 2)$

Factor the expression.

33. $x^2 + 13x + 30$

34. $a^2 - 6a - 16$

35. $3x^2 - 8x + 4$

Solve the equation by factoring.

36. $y^2 + 4y - 32 = 0$

37. $2x^2 - x - 1 = 0$

38. $4x^2 + 44x + 121 = 0$

Find the missing length of the right triangle using the Pythagorean Theorem $a^2 + b^2 = c^2$. Remember that a and b are the lengths of the legs and c is the length of the hypotenuse. In questions #42-44, find the unknown lengths of the right triangle.

39. $a = 3, b = 4$

40. $a = 5, c = 10$

41. $a = x, b = 1, c = \sqrt{2x}$

42. $a = x, b = x + 6, c = 2\sqrt{17}$

43. $a = x, b = 2x - 1, c = 2x + 1$

Simplify the following fractions.

44. $\frac{5bc^2}{25b^3c}$

45. $\frac{x+2}{3x+6}$

46. $\frac{9x-6y}{3}$

47. $\frac{a^2+8a+16}{a^2-16}$

Solve the proportion.

48. $\frac{5}{3x} = \frac{1}{15}$

49. $\frac{x-2}{4} = \frac{x+10}{10}$

50. $\frac{9-x}{x+4} = \frac{5}{2x}$