

DR. ROLANDO ESPINOSA K-8 CENTER

SUMMER HOME LEARNING



MATH

SUMMER HOME LEARNING

GRADE 8

This summer home learning will be due the first week of school and it will be graded. These are the concepts you are expected to know coming into the 8th grade. Make sure that you show all your work for each question. You should complete the entire packet without the use of a calculator. No credit will be given to any question(s) you answer without showing work. Please use a pencil only and show your work. Use additional paper if necessary.

NO WORK = NO CREDIT

NAME: _____ PERIOD: _____ ID: _____

Mathematics Summer Learning (show work on separate paper)

Select the best answer.

- Which algebraic expression represents “twice the sum of y and 9”?
A $2 + 9y$ C $2(y + 9)$
B $2(9y)$ D $2 + (y + 9)$
- What is $12xy$ evaluated for $x = 5$ and $y = 2$?
F 19 H 120
G 22 I 210
- Winnie stuffs 120 envelopes in 15 minutes. How many envelopes can she stuff per minute?
A 8 envelopes per minute
B 9 envelopes per minute
C 480 envelopes per minute
D 1800 envelopes per minute
- What is $4(x^2 - 3x) + 12x^2 + x$ simplified?
F $4x^2 - 3x$ H $16x^2 - 11x$
G $13x^2 - 2x$ I $16x^2 - 12x$
- Which pair of expressions is equivalent?
A $7(1 - k)$ and $7 - k$
B $7(1 - k)$ and $1 - 7k$
C $7(1 - k)$ and $7 - k$
D $7(1 - k)$ and $7 - 7k$
- Which is equivalent to $\frac{4^{-5}}{4^{-3}}$?
F 4^{-2} H 2^{-4}
G 42 I $\frac{1}{4^{-2}}$

7. Which is 34,000 in scientific notation?

A 3.4×10^{-4}

C 3.4×10^3

B 3.4×10^{-3}

D 3.4×10^4

8. Which is $6\frac{3}{4}\left(\frac{2}{9}\right)$ simplified?

$$F \frac{2}{3}$$

$$H \quad 5\frac{5}{6}$$

$$G \quad \frac{3}{2}$$

$$1 \quad 6 \frac{1}{6}$$

9. What is $\frac{3}{4} \div \frac{7}{8}$ simplified?

$$A \quad \frac{6}{7}$$

$$C \quad \frac{21}{40}$$

$$B \quad \frac{7}{6}$$

$$D \quad \frac{40}{21}$$

10. What is $3\sqrt{18} + 2\sqrt{50}$ simplified?

$$F = 19\sqrt{2}$$

$$H \quad 77\sqrt{2}$$

$$G = 39\sqrt{2}$$

$$1 \quad 90\sqrt{2}$$

11. Which is $\left| -\frac{3}{8} + \frac{2}{5} \right| - \left| -\frac{1}{4} \right|$ simplified?

$$A = \frac{11}{40}$$

$$C \quad \frac{9}{40}$$

$$B = -\frac{9}{40}$$

D $\frac{11}{40}$

Mathematics Summer Learning (show work on separate paper)

12. What is the value of x in the equation

$$x - \frac{4}{9} = \frac{2}{11}?$$

F $x = -\frac{62}{99}$

H $x = \frac{26}{99}$

G $x = -\frac{26}{99}$

I $x = \frac{62}{99}$

13. Which is the range of the relation below?

x	0	2	4	6	8
y	-2	-1	0	1	2

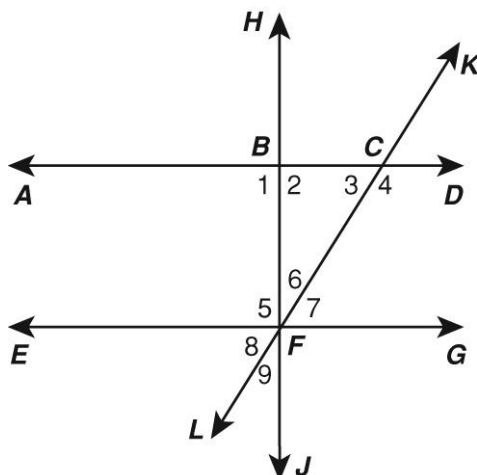
A 0, 2, 4, 6, 8

B -2, -1, 0, 1, 2

C -2, -1, 0, 1, 2, 4, 6, 8

D 0, 2

Use the figure below for 14 and 15.



14. Line AD is parallel to line EG . If $m\angle 3$ is 70° , what is $m\angle 4$?

F 10°

H 110°

G 20°

I 290°

15. Which angle is congruent to $\angle 3$?

A $\angle 2$

C $\angle 6$

B $\angle 4$

D $\angle 8$

16. What is the sum of the interior angle measures of a pentagon?

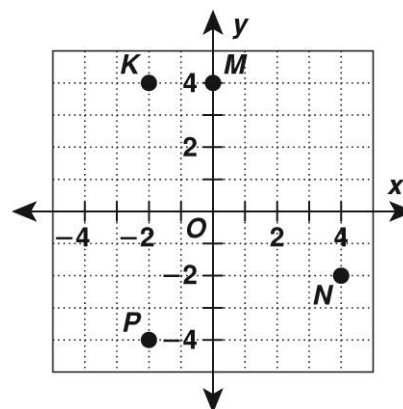
F 900°

H 360°

G 540°

I 180°

17. What are the coordinates of point K ?



A $(-2, 4)$

C $(2, -4)$

B $(-2, -4)$

D $(2, 4)$

18. The legs of a right triangle are 75 and 100. What is the length of the hypotenuse?

F $5\sqrt{5}$

H 250

G 125

I 625

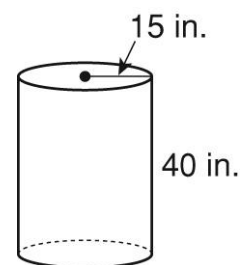
19. What is the volume of the cylinder? Use 3.14 for π .

A 1200 cubic inches

B 1884 cubic inches

C 3768 cubic inches

D 28,260 cubic inches



20. Which ordered pair is a solution to $y = 7x - 3$?

F $(-2, -17)$

H $(2, 7)$

G $(-2, 11)$

I $(2, 14)$

Mathematics Summer Learning (show work on separate paper)

21. What is 40 kilometers per hour in meters per hour?
- A 0.040 meters per hour
B 40 meters per hour
C 4000 meters per hour
D 40,000 meters per hour
22. What is the missing value in the proportion $\frac{3}{15} = \frac{2}{n}$?
- F $n = 5$ H $n = 12$
G $n = 10$ I $n = 20$
23. A length on a map is 7.5 inches. The scale is 1 inch:5 miles. What is the actual distance?
- A 1.5 miles C 12.5 miles
B 2.5 miles D 37.5 miles
24. About 60% of the normal human being's body weight is composed of water. How much of a 125 pound person is water weight?
- F 72 pounds H 76 pounds
G 75 pounds I 80 pounds
25. 0.2% of what number is 12?
- A 6000 C 2.4
B 60 D 0.024
26. Last month, Rhonda earned \$3200. Of that amount, she spent \$1350 on rent. What percent of her income went to rent, to the nearest tenth of a percent?
- F 13.5% H 42.2%
G 32.0% I 57.8%

27. What are the first and third quartiles for the following data set?

12, 15, 18, 16, 14, 9, 12, 21

- A 9 and 21 C 12 and 17
B 12 and 16 D 15 and 17

28. What is the smallest value in the stem-and-leaf plot below?

Stem	Leaves
0	2 3 3 7
1	1 3 7 7 8
2	0 0 7
3	4 4 5 5

Key: 3 | 5 means 35

- F 2 H 35
G 20 I 2337

29. Which is the solution to $-\frac{x}{2} \leq -4$?

- A $x \leq -8$ C $x \leq 8$
B $x \geq -8$ D $x \geq 8$

30. What is the solution to $5z + 16 = 34 - z$?

- F 2 H 4.5
G 3 I 6

31. Which inequality is represented by this graph?



- A $\frac{x}{5} - 6 > -4$ C $\frac{x}{5} - 6 < -4$
B $\frac{x}{5} - 5 > 45$ D $\frac{x}{5} + 5 > -45$

Mathematics Summer Learning (show work on separate paper)32. What is $(x - 8)(x + 5)$?

F $x^2 - 3$

G $x^2 - 3x - 40$

H $x^2 + 3x - 40$

I $x^2 - 13x - 40$

33. What is the solution to the system of equations below?

$y = 3x + 1$

$5x - y = 3$

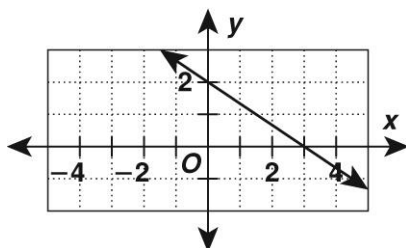
A (2, 3)

C (1, 2)

B (0, 1)

D (2, 7)

34. Which is the rule for the linear function graphed below?



F $f(x) = -\frac{2}{3}x + 2$

G $f(x) = -x + 2$

H $f(x) = -\frac{3}{2}x + 3$

I $f(x) = x - 2$

35. What is the point-slope form of the equation for the line with a slope of -2 that passes through $(1, 4)$?

A $y + 1 = -2(x + 4)$

B $y - 1 = -2(x - 4)$

C $y + 4 = -2(x + 1)$

D $y - 4 = -2(x - 1)$

36. Given that y varies directly with x , what is the equation of direct variation if y is 3 when x is 7?

F $y = \frac{3}{7}x$

H $y = 3x + 7$

G $y = \frac{7}{3}x$

I $y = \frac{3}{7}x$

37. What is $(4n + 3n^2 + 2) - (n - 6n^2 + 1)$ simplified?

A $-3n^2 + 3n - 2$

C $9n^2 + 3n + 2$

B $3n^2 + 3n + 2$

D $9n^2 + 3n + 1$

38. Which equation represents the data in the table?

x	0	1	2	3	4
y	-4	-2	0	2	4

F $y = x - 4$

H $y = 2x - 4$

G $y = 2x - 2$

I $y = 4x - 4$

39. In a loaf of bread, does the number of slices eaten and the number of slices remaining in the loaf have a positive, a negative, or no correlation? Explain.

A Negative: The more slices eaten, the fewer slices that remain.

B Negative: The more slices eaten, the more slices that remain.

C Positive: The more slices eaten, the fewer slices that remain.

D Positive: The more slices eaten, the more slices that remain.

40. What is $f(3)$ for the quadratic function $f(x) = 2x^2 + x - 12$?

F -3

G 3

H 6

I 9