Middle School
Algebra Summer Assignment

***Please show all work on the answer sheets provided in this packet.** Do not throw anything out! You will be entering your answers electronically and handing in the work to your algebra teacher when we return in September.

Due: Friday, September 11th, 2026

This will be graded and you will be tested on the material in this book

Name _____

Name _____ **Algebra Summer Assignment #1**

1.

p =

2.

x =

3.

x <

4.

x =

5.

Choice ____

6.

Choice ____

7.

Diameter _____

Circumference _____

Area _____

8.

_____ sq. cm.

9.

_____sq m

10.

Choice ____

11.

m=

12.

Choice ____

13. x >	14. Choice ____	15. Choice ____
16. Choice ____	17. Choice ____	18. Choice ____
19. Choice ____	20. Choice ____	21. Choice ____
22. Choice ____	23. Choice ____	24. Choice ____

Name:_____

Assignment: Accelerated Algebra Summer Assignment #1

1 Find the solution to the equation $4\frac{1}{2}p + \frac{1}{2} = 7\frac{1}{4}$. Express your answer in lowest terms.

Answer: $p =$ ☐ ☐/☐

2 Simplify and solve: $12 - 2(x - 5) = 20$.

Answer: $x =$ ☐

3 Simplify and solve the inequality: $-4(x + 2) > 44$.

Answer: $x <$ ☐

4 Find the solution to the equation: $\frac{1}{5}x - 9 = \frac{3}{4}$, expressing x as a mixed number in simplest form.

Answer: $x =$ ☐ ☐/☐

5 Which expression represents the perimeter of this rectangle?

1 $2x + 6$
2 $4x + 12$
3 $4(x + 6)$
4 $4x$

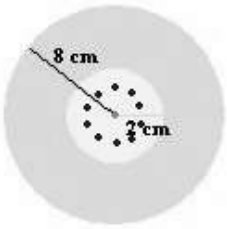
6 Kim has a living room that measures 12 feet by 12 feet. She wants to buy the largest circular area rug that she can find for the room. There are four rugs at a local department store. Which rug should she buy?

1 4 foot radius
2 6 foot radius
3 8 foot radius
4 10 foot radius

7 Fill in the table below with data for the circle. Use a calculator and round all answers to the *nearest whole number*.

Radius	6.5
Diameter	
Circumference	
Area	

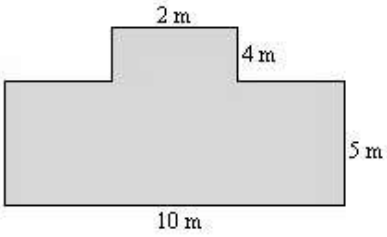
8 Ellen is making a small round birthday cake for her niece. If she wants to put a circular picture of her favorite character in the middle, how much of the top of the cake will be left for icing?



Use a calculator and round your answer to the *nearest tenth* of a square centimeter.

Answer: [ ] square centimeters

9 Find the area of this irregular figure.



Answer: [ ] square meters

10 {-2} is the solution set to which of the following?

1 $-2x + 6 = 10$
2 $2x + 6 = 10$
3 $4x + 12 = 20$
4 $6x + 9 = 6$

11 Find the solution to $5 + \frac{m}{7} = 10$.

Answer: $m =$ [ ]

12 Max is saving $10 a month for a summer vacation. If he also has $50 from his grandmother, how many months will Max need to save to have a total of $200? Choose the equation that represents this situation.

1 $50m + 10 = 200$
2 $50m - 10 = 200$
3 $10m - 50 = 200$
4 $10m + 50 = 200$

13 Find the solution to $-12 > -2x$.

Answer: $x >$ ☐

14 The local weather station reported that your town received 5 inches of snow in 3 hours where the snow fell at the same rate for all 3 hours. In what other town was the rate of snow fall the same?

1 Town A: received 10 inches of snow in 6 hours where the snow fell at the same rate for all 6 hours
2 Town B: received 4 inches of snow in 2 hours where the snow fell at the same rate for all 2 hours
3 Town C: received 0.5 inches of snow in 1 hour where the snow fell at the same rate for the one hour
4 Town D: received 7.5 inches of snow in 5.5 hours where the snow fell at the same rate for all 5.5 hours

15 Which value of x is the solution of the equation $\frac{2}{3}x + \frac{1}{2} = \frac{5}{6}$?

1 $\frac{1}{2}$
2 2
3 $\frac{2}{3}$
4 $\frac{3}{2}$

16 What is the value of x in the equation $2(x - 4) = 4(2x + 1)$?

1 -2
2 2
3 $-\frac{1}{2}$
4 $\frac{1}{2}$

17 Jeremy surveyed students at his school for a math project. When he analyzed the results, 38 people, or 18% of those surveyed, selected hamburgers as their favorite food. How many people did Jeremy survey for his math project? (Round your answer to the nearest whole number, if necessary.)

1 212
2 210
3 684
4 211

18 What is the correct verbal statement for the given algebraic equation, $3x - 6 = -2$?

1 Three times a number decreased by −6 is −2.
2 Three times a number decreased by 6 is −2.
3 Twice a number increased by 3 is 4.
4 A number cubed decreased by 6 is −2.

19 Which equation would best model this situation?
Al bought a sound system that cost a total of $650.00, and he also bought some CD's at $9.99 each. The total that Al spent was $719.93. How many CD's did Al buy? [Ignore sales tax.]

1 $650.00 + 9.99n = 719.93$
2 $650.00 - 9.99n = 719.93$
3 $650.00 \times 9.99n = 719.93$
4 $650.00 \div 9.99n = 719.93$

20 What is the y-intercept of the graph of the equation $y = -\frac{2}{3}x + 4$?

1 $-\frac{2}{3}$
2 −2
3 3
4 4

21 The table below could be used to graph which equation?

x	*y*
0	2
1	1
−1	3
2	0

1 $y = -x + 2$
2 $y = x + 2$
3 $y = -x - 2$
4 $y = x - 2$

22 What is the slope of the graph of the line $6x - 2y = 15$?

1 −7.5
2 −3
3 2.5
4 3

23 Which equation is equivalent to $3x + 4y = 15$?

1 $y = \frac{15-3x}{4}$
2 $y = \frac{3x-15}{4}$
3 $y = 15 - 3x$
4 $y = 3x - 15$

24 The line $3x - 2y = 12$ has

1 a slope of $\frac{3}{2}$ and a y-intercept of -6
2 a slope of $-\frac{3}{2}$ and a y-intercept of 6
3 a slope of 3 and a y-intercept of -2
4 a slope of -3 and a y-intercept of -6

Name _____ **Algebra Summer Assignment #2**

1. Answer : ___ cans	2. Answer:	3. Answer: ____ ft
4. Choice ____	5. Answer: ____ days	6. Answer: sq ft
7. Answer:	8. Answer: ___ cans	9. x =
10. x =	11. t =	12. q =

13. Choice ___	14. Choice ____	15. Choice ____
16. Choice: ___	17. Choice ____	18. a =
19. Choice ____	20. Choice ___	

Name:_____

Assignment: Accelerated Algebra Summer Assignment #2

1 Steve has 5 cans of soda. If he gives $3\frac{1}{2}$ of them away, how many cans of soda does he have left? Write your answer in simplest form.

Answer: $\square \; \frac{\square}{\square}$

2 Evaluate $A + B + C$ if $A = \frac{2}{3}$, $B = \frac{1}{4}$, and $C = \frac{5}{12}$. Write your answer in simplest form.

Answer: $\square \; \frac{\square}{\square}$

3 Al wants to put a railing next to his stairs. The railing needs to be $18\frac{1}{3}$ feet long. If he has 2 pieces of wood that are each $7\frac{1}{2}$ feet long, how long must the third piece be? Write your answer in simplest form.

Answer: $\square \; \frac{\square}{\square}$ feet

4 Which list orders the following set of fractions from *least to greatest*?

$\frac{5}{12}, \frac{4}{6}, \frac{1}{2}, \frac{3}{24}$

1 $\frac{4}{6}, \frac{1}{2}, \frac{5}{12}, \frac{3}{24}$

2 $\frac{3}{24}, \frac{5}{12}, \frac{1}{2}, \frac{4}{6}$

3 $\frac{5}{12}, \frac{1}{2}, \frac{3}{24}, \frac{4}{6}$

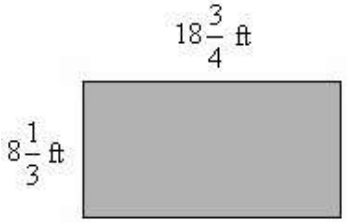
4 $\frac{4}{6}, \frac{1}{2}, \frac{3}{24}, \frac{5}{12}$

5 Jim spends $3\frac{1}{2}$ days a month away from home. If he does this for $6\frac{1}{2}$ months. How many days would Jim be away from home? Express your answer in simplest form.

Answer: $\square \; \frac{\square}{\square}$ days

6 The area of a rectangle is its length × width. Sajad's swimming pool is in the shape of a rectangle. The length of pool is $18\frac{3}{4}$ feet.

The width is $8\frac{1}{3}$ feet.



What is the area of Sajad's swimming pool?

Answer: $\square$ square feet

7 Solve: $2\frac{2}{3} \div \frac{5}{6}$. Express your answer in simplest form.

Answer: $\square$

8 Sid has $6\frac{2}{3}$ cans of soda left. He wants to pour the contents evenly into each of 4 cups. How much soda will be in each cup?

Answer: $\square$ cans

9 Find x:

$-4x - 8 = -16$

$x =$ $\square$

10 Solve this equation for x: $\frac{x}{4.5} + 2.8 = 7.9$.

Answer: $x =$ $\square$

11 Simplify and solve $5t - 2 - t = 14$.

Answer: $t =$ $\square$

12 Find q: $16 - 2q = q + 7$.

Answer: $q =$ $\square$

13 Solve for x: $6(x - 2) - 4x = 16$

1 2
2 7
3 12
4 14

14 Solve for x: $4(2x - 1) = 2x + 35$

1 3.9
2 6.5
3 6
4 39

15 Solve for x: $15x - 3(3x + 4) = 6$

1 1
2 $-\frac{1}{2}$
3 3
4 $\frac{1}{3}$

16 At the beginning of her mathematics class, Mrs. Reno gives a warm-up problem. She says, "I am thinking of a number such that 6 less than the product of 7 and this number is 85." Which number is she thinking of?

1 $11\frac{2}{7}$
2 13
3 84
4 637

17 If $-2x + 3 = 7$ and $3x + 1 = 5 + y$, the value of y is

1 1
2 0
3 -10
4 10

18 Simplify and solve for a: $-3(a - 2) + 1 = 28$.

Answer: $a =$ _____

19 Which phrase does *not* represent $12 + n$?

1 The sum of 12 and a number.
2 The total of 12 and a number.
3 12 + a number.
4 The product of 12 and a number.

20 Kylie and Rhoda are solving the equation $4(x - 8) = 7(x - 4)$.

- Kylie uses a first step that results in $4x - 32 = 7x - 28$.
- Rhoda uses a first step that results in $4x - 8 = 7x - 4$.

Which statement about the first steps Kylie and Rhoda use is true?

1 Kylie uses the associative property, resulting in a correct first step.
2 Kylie uses the distributive property, resulting in a correct first step.
3 Rhoda uses the associative property, resulting in a correct first step.
4 Rhoda uses the distributive property, resulting in a correct first step.

Name _____ **Algebra Summer Assignment #3**

1. Choice: _____	2. Answer: ___%	3. Choice: _____
4. Choice _____	5. Choice: ___	6. Answer: $_____
7. Choice: _____	8. Choice: _____	9. Choice: ___
10. Choice: ___	11. Choice: ___	12. Choice: ___

13. Choice: ___	14. Choice: ___	15. Choice ____
16. Choice: ___	17. Choice ____	18. Choice: ___
19. Choice ____	20. Choice: ___	

Name:_____ Class/Period:_____

Assignment: Accelerated Algebra Summer Assignment #3

1 Linda paid $48 for a jacket that was on sale for 25% of the original price. What was the original price of the jacket?

1 $60
2 $72
3 $96
4 $192

2 A 14-gram serving of mayonnaise contains 11 grams of fat. What percent of the mayonnaise, to the *nearest tenth of a percent*, is fat?

Answer: [ ] %

3 Solve for x: $15x - 3(3x + 4) = 6$

1 1
2 $-\frac{1}{2}$
3 3
4 $\frac{1}{3}$

4 Solve for x: $\frac{x}{4} + 7 = 5$

1 8
2 −8
3 3
4 $-\frac{1}{2}$

5 Solve for x: $\frac{3x}{4} - 1 = 2$

1 $\frac{4}{3}$
2 2
3 3
4 4

6 Sue bought a picnic table on sale for 50% off the original price. The store charged her 10% tax and her final cost was $22.00. What was the original price of the picnic table?

Answer: $[ ]

7 $\frac{1}{10}\%$ is equivalent to all of the following *except*

1 0.1%
2 0.001
3 $\frac{1}{100}$
4 $\frac{1}{1000}$

8 Expressed as a fraction, the sum of $\frac{4y}{5}$ and $\frac{3y}{4}$ is equivalent to

1 $\frac{31y}{20}$
2 $\frac{7y}{9}$
3 $\frac{7y}{20}$
4 $\frac{31y}{9}$

9 The product of $2x^3$ and $6x^5$ is

1 $10x^8$
2 $12x^8$
3 $10x^{15}$
4 $12x^{15}$

10 Which expression has the same value as $5(4x + 4)$?

1 $20x + 20$
2 $9x + 20$
3 $40x$
4 $13x$

11 Which expression is equivalent to $4(p + 2k) + k$

1 $8p + k$
2 $4p + 3k$
3 $4p + 9k$
4 $p + 3k$

12 Stefano purchased a truck for $\frac{5}{6}$ of the sticker price of $35,670. He had to pay 7.25% sales tax. What was the amount of Stefano's bill?

1 $42,804.00
2 $32,311.08
3 $31,880.06
4 $29,725.00

13 Your family purchased new living room furniture on credit at the store, which is a simple interest loan. If your family paid $300.00 in interest on the principal of $1,000.00 over 5 years, what was the rate of the loan?

1 6%
2 8%
3 4%
4 2%

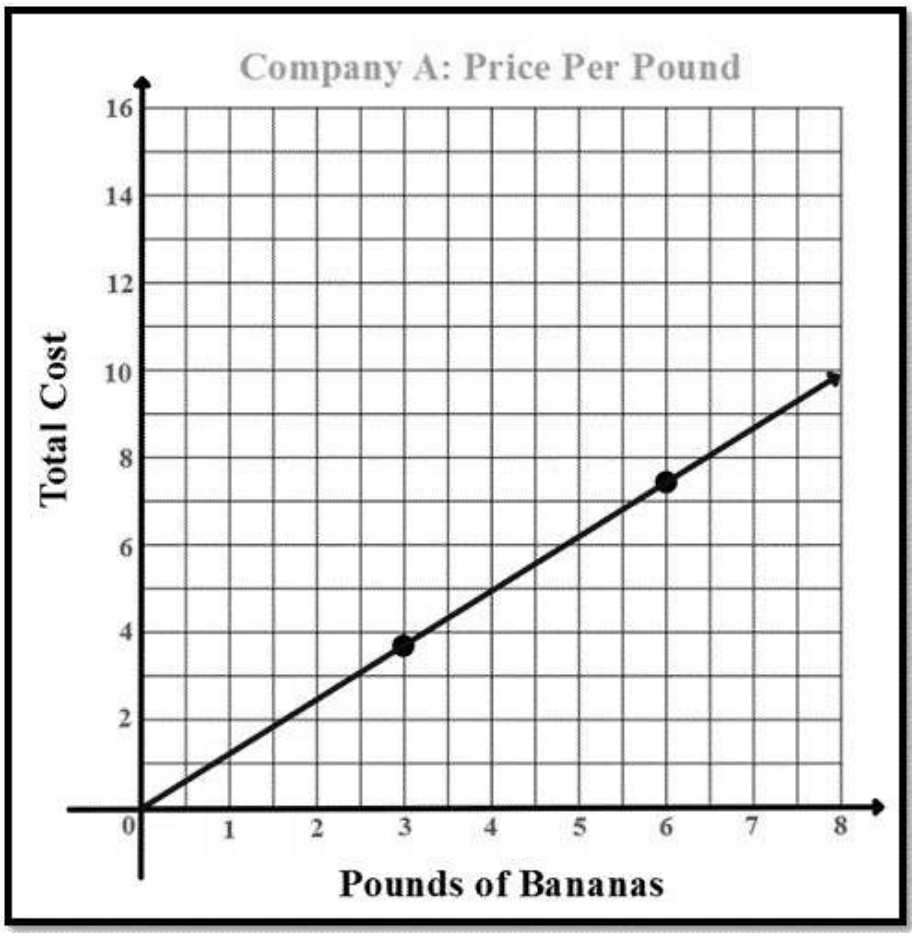
14 Dennis bought a book for $12.95, and his total bill was $13.92. What was the sales tax rate that was applied to his purchase?

1 9.5%
2 7.5%
3 9.7%
4 6%

15 Simplify the expression: $8xy - (x + 2xy) + 3x$

1 $-6xy + 3x$
2 $6xy + 3x$
3 $6xy + 2x$
4 $6xy + 2y$

16



The graph above represents the cost of bananas compared to the weight of the bananas for Company A. Company B uses the equation $c = 1.5w$ to figure out the cost, c, for a certain weight, w, in pounds of bananas.
Select the statement that is true.

1 The unit rate for Company A is greater than the unit rate for Company B.
2 Two pounds of bananas would cost the same at Company A and Company B.
3 Eight pounds of bananas costs no more than $10 at Company A and Company B.
4 Ten pounds of bananas costs more at Company B than at Company A.

17

A recipe for a dozen cookies calls for $\frac{3}{4}$ c. chocolate chips, $\frac{1}{2}$ c. sugar, 1 $\frac{1}{2}$ c. flour, and 2 eggs. If Kathy wants to make 4 dozen cookies, which should she use?

1 3 c. chocolate chips, 2 c. sugar, 6 c. flour, 8 eggs
2 6 c. chocolate chips, 1 c. sugar, 3 c. flour, 4 eggs
3 1 $\frac{1}{2}$ c. chocolate chips, 1 c. sugar, 3 c. flour, 4 eggs
4 9 c. chocolate chips, 6 c. sugar, 9 c. flour, 10 eggs

18 Phone company *A* sells 1200 minutes for $132 per month and phone company *B* sells 2000 minutes for $260 per month. Which company is cheaper and by how much per minute?

1 Company *A* by 3 cents per minute
2 Company *B* by 5 cents per minute
3 Company *A* by 2 cents per minute
4 Company *B* by 4 cents per minute

19 Three times as many robins as cardinals visited a bird feeder. If a total of 20 robins and cardinals visited the feeder, how many were robins?

1 5
2 10
3 15
4 20

20 A total of $450 is divided into equal shares. If Kate receives four shares, Kevin receives three shares, and Anna receives the remaining two shares, how much money did Kevin receive?

1 $100
2 $150
3 $200
4 $250

Name _____ **Algebra Summer Assignment #4**

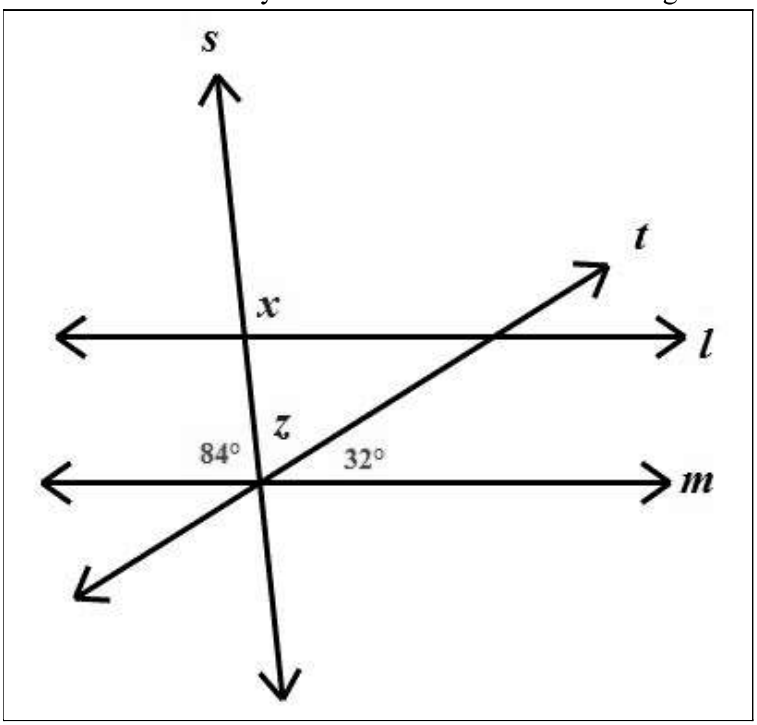
1. Choice: ____	2. Choice: ____	3. Choice: _____
4. Choice ____	5. Choice: ___	6. Choice: _____
7. Choice: ____	8. Choice: ____	9. Choice: ___
10. Choice: ___	11. Choice: ___	12. Choice: ___

13. Choice: ___	14. Choice: ___	15. Choice ____
16. Choice: ___	17. Choice ____	

Name:_____

Assignment: Accelerated Algebra Summer Assignment #4

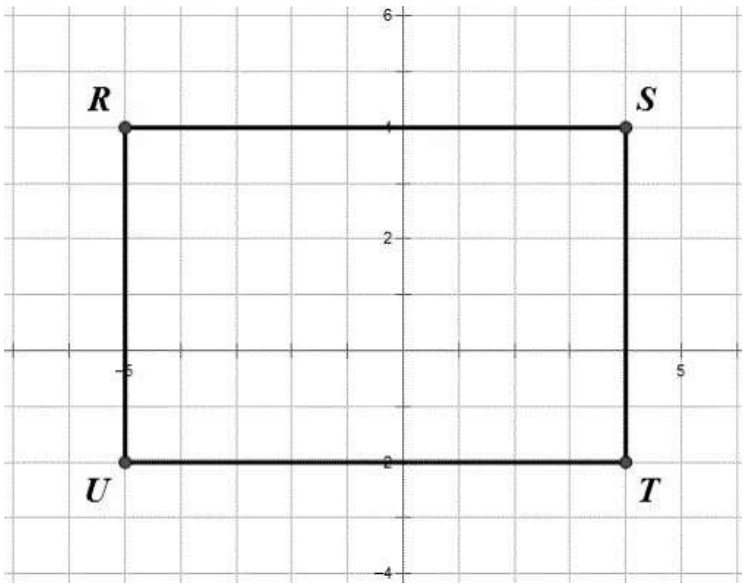
1 Parallel lines *l* and *m* are cut by transversals *s* and *t* to form the diagram below.



What is the value of *x*?

1 58°
2 64°
3 96°
4 116°

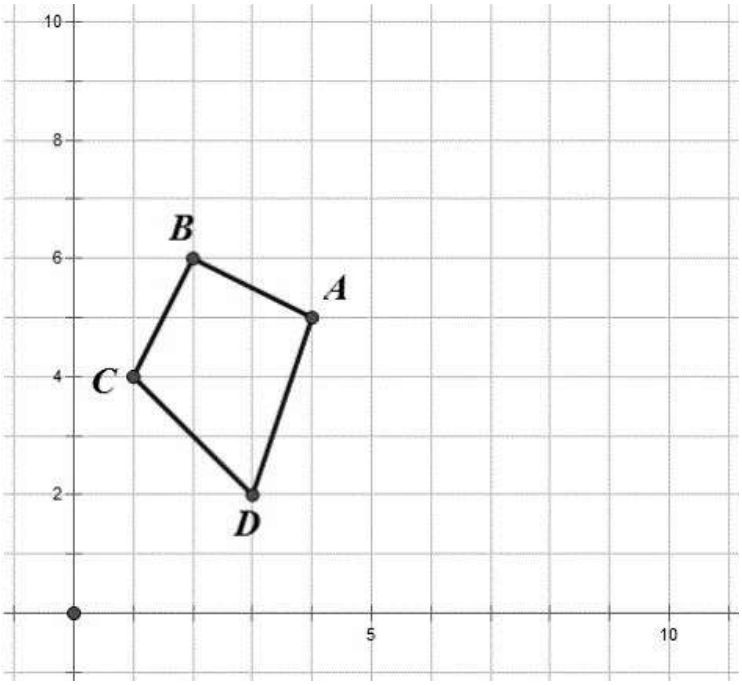
2 The rectangle below was dilated by a scale factor of $\frac{1}{3}$.



After the dilation, what is the perimeter of $R'S'T'U'$?

1 60 units
2 30 units
3 15 units
4 10 units

3 Quadrilateral *ABCD* is translated so that the coordinates of *B′* are (5, 8).



What are the coordinates of *D′*?

1 (4, 6)
2 (6, 4)
3 (7, 7)
4 (8, 5)

4 If $(7.6 \times 10^{n})(3.5 \times 10^{3}) = 2.66 \times 10^{9}$, what is the value of n?

1 6
2 5
3 3
4 7

5 What are the coordinates of the image of point *A* (2, -7) under the translation $(x, y) \rightarrow (x - 3, y + 5)$?

1 (-1, -2)
2 (-1, 2)
3 (5, -12)
4 (5, 12)

6 The vertices of ΔJKL have coordinates *J*(5,1), *K*(-2,-3), and *L*(-4,1). Under which transformation is the image $\Delta J'K'L'$ *not* congruent to ΔJKL?

1 a translation of two units to the right and two units down
2 a counterclockwise rotation of 180 degrees around the origin
3 a reflection over the x-axis
4 a dilation with a scale factor of 2 and centered at the origin

7 Which expression is equivalent to $(5^{-2}a^3b^{-4})^{-1}$?

1 $\frac{10b^4}{a^3}$

2 $\frac{25b^4}{a^3}$

3 $\frac{a^3}{25b^4}$

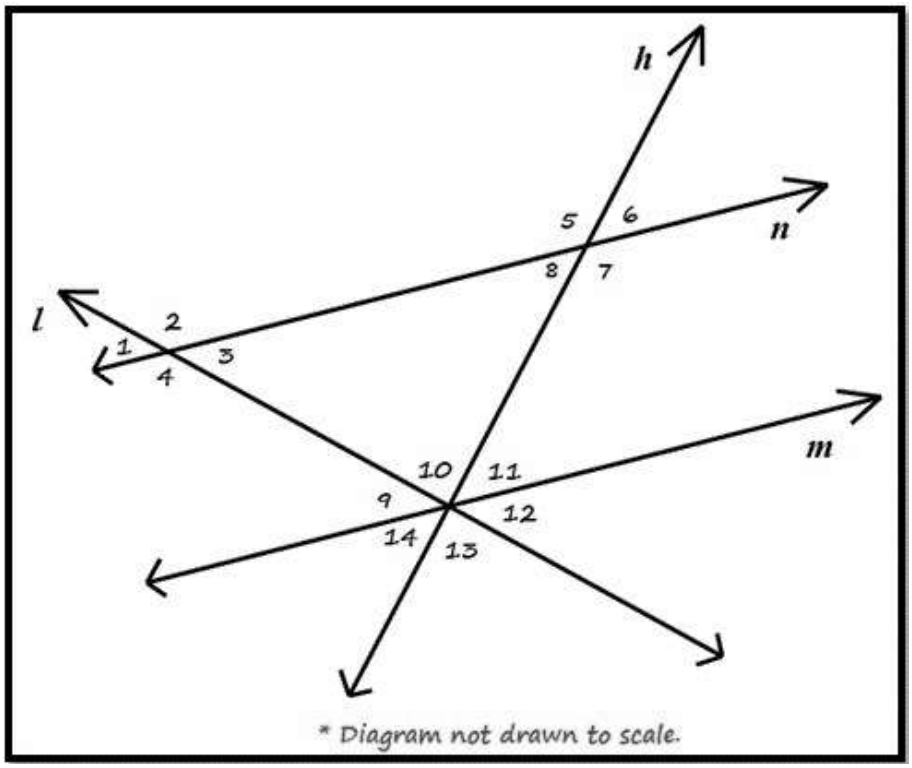
4 $\frac{a^2}{125b^5}$

8

Figure 1

In the diagram below:

- line *n* is parallel to line *m*
- m∠5 = 132°
- m∠9 = 43°
- lines *h* and *l* are transversals



Refer to Figure 1 and answer the following Question:
What is the measure of ∠11?

1 48°
2 43°
3 137°
4 132°

9 Which equation is true?

1 $\frac{c^5}{d^7} \div \frac{d^3}{c} = \frac{c^4}{d^4}$

2 $\left(-2m^2p\right)^3 = -8m^6p^3$

3 $\left(\frac{s^3t^8}{s^4t^5}\right)^2 = \frac{t^5}{s^2}$

4 $\left(-2a^2b^3\right)\left(3ab^2\right) = a^3b^5$

10 Which expression is equivalent to $\frac{x^{-1}y^4}{3x^{-5}y^{-1}}$?

1 $\frac{x^4y^5}{3}$
2 $\frac{x^5y^4}{3}$
3 $3x^4y^5$
4 $\frac{y^4}{3x^5}$

11 A recent computer study showed that computer *A* processes up to 5.12×10^4 bits of data every second. Computer *B* processes up to 1.28×10^7 bits of data per second. How many times faster is computer *B* than computer *A*?

1 6.40×10^2
2 2.50×10^2
3 4.00×10^{-3}
4 3.84×10^3

12 Which shows $(3^2)^{-2}$ in standard form?

1 1
2 −81
3 $\frac{1}{81}$
4 0

13 What is the value of $\left(\frac{3}{4}\right)^3$?

1 $\frac{9}{16}$
2 $\frac{3}{64}$
3 $\frac{9}{4}$
4 $\frac{27}{64}$

14 Simplify the expression $\frac{3x^{-4}y^{5}}{\left(2x^{3}y^{-7}\right)^{-2}}$ using only positive exponents.

1 $\frac{y^{9}}{12x^{2}}$
2 $\frac{12x^{2}}{y^{9}}$
3 $\frac{3y^{12}}{2x}$
4 $\frac{2x}{3y^{12}}$

15 The expression $\frac{12w^{9}y^{3}}{-3w^{3}y^{3}}$ is equivalent to

1 $-4w^{6}$
2 $-4w^{3}y$
3 $9w^{6}$
4 $9w^{3}$

16 The distance to the Moon from Earth is 5.05×10^{8} miles. The distance to the Pluto is 5.05×10^{16} miles. How many times the distance to the Moon is it to Pluto?

1 10^{8}
2 10,000,000
3 10^{9}
4 10^{-8}

17 How would you change 2.05×10^{-1} to 2.05×10?

1 Multiply by 1,000.
2 Divide by 1,000.
3 Divide by 100.
4 Multiply by 100.