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 12th, 2025

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: $x =$ ☐

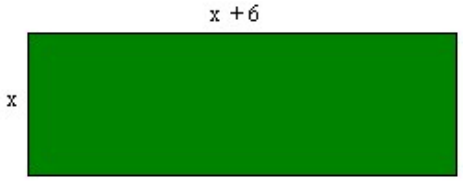
3 Simplify and solve the inequality: $-4(x + 2) > 44$.

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 $4x$

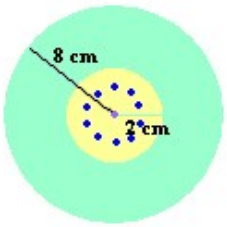
6 Kim has a living room that measures 12 feet by 12 feet. She wants to buy the largest circular area rug that she can find for the room. There are four rugs at a local department store. Which rug should she buy?

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	

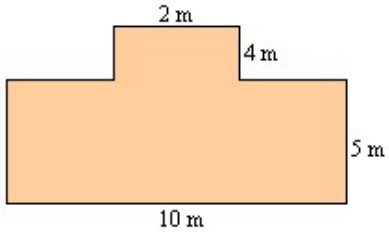
8 Ellen is making a small round birthday cake for her niece. If she wants to put a circular picture of her favorite character in the middle, how much of the top of the cake will be left for icing?



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

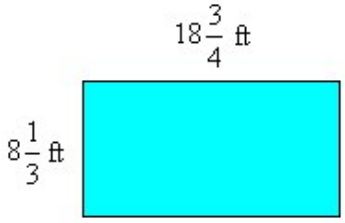
4 $\frac{4}{6}, \frac{1}{2}, \frac{3}{24}, \frac{5}{12}$

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 feet

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

Answer: ☐

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: ☐ cans

9 Find x:

$-4x - 8 = -16$

$x =$ ☐

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

Answer: $x =$ ☐

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

Answer: $t =$ ☐

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

Answer: $q =$ ☐

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%

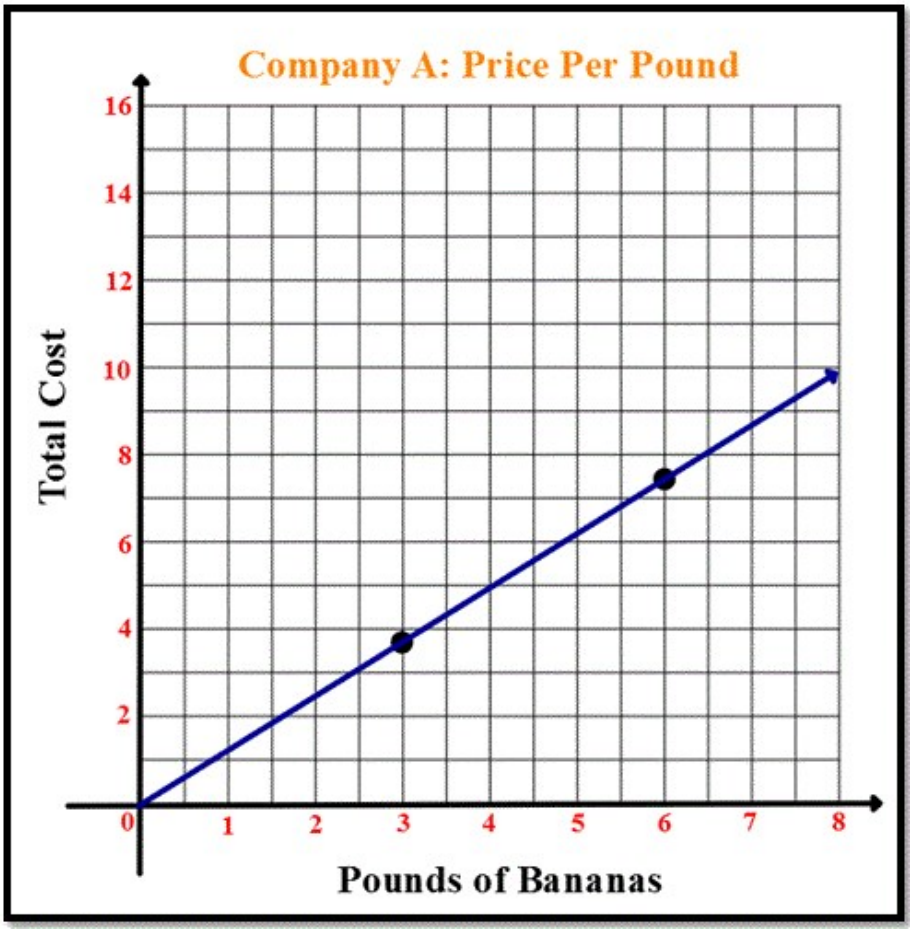
14 Dennis bought a book for $12.95, and his total bill was $13.92. What was the sales tax rate that was applied to his purchase?

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**

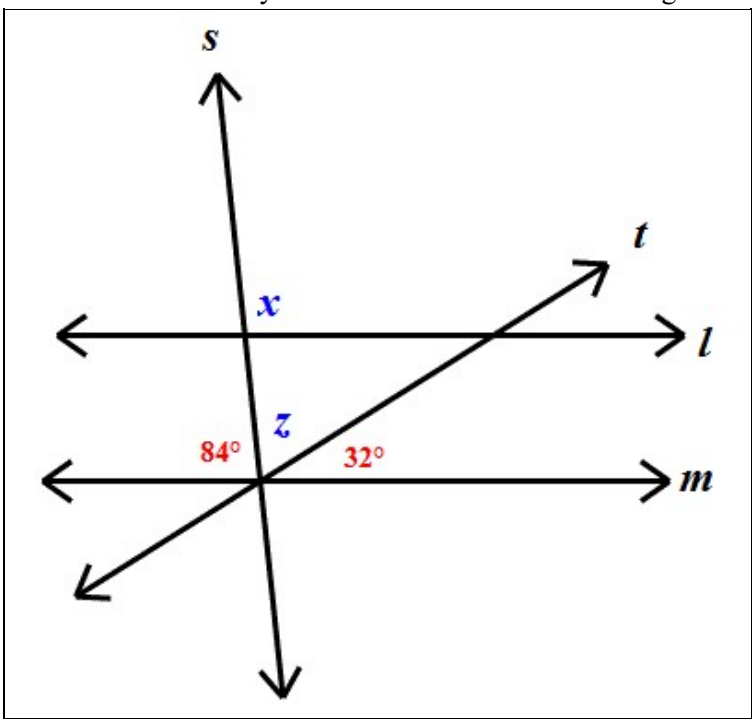
1. Choice: ____	2. Choice: ____	3. Choice: _____
4. Choice ____	5. Choice: ___	6. Choice: _____
7. Choice: ____	8. Choice: ____	9. Choice: ___
10. Choice: ___	11. Choice: ___	12. Choice: ___

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

Name:_____

Assignment: Accelerated Algebra Summer Assignment #4

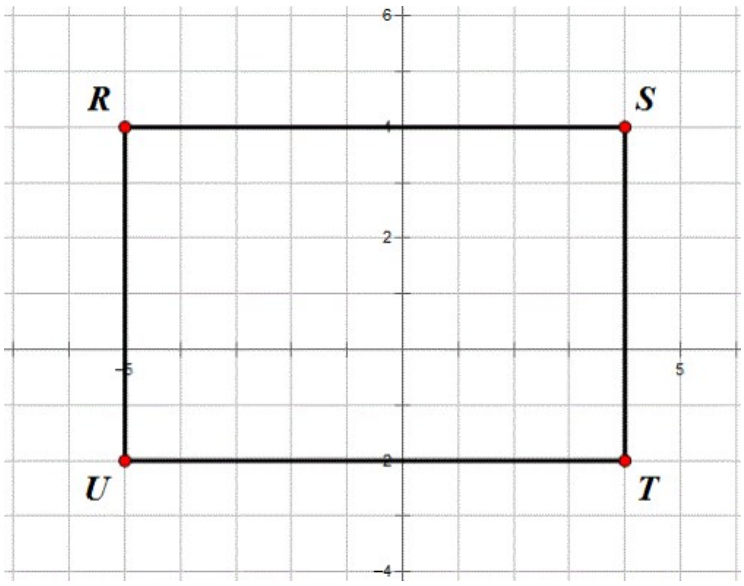
1 Parallel lines l and m are cut by transversals s and t to form the diagram below.



What is the value of x?

1 58°
2 64°
3 96°
4 116°

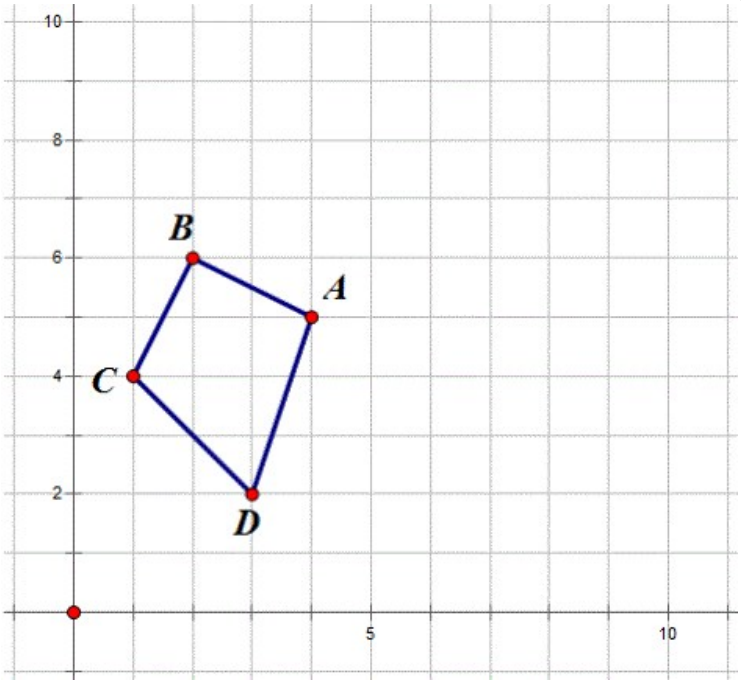
2 The rectangle below was dilated by a scale factor of $\frac{1}{3}$.



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

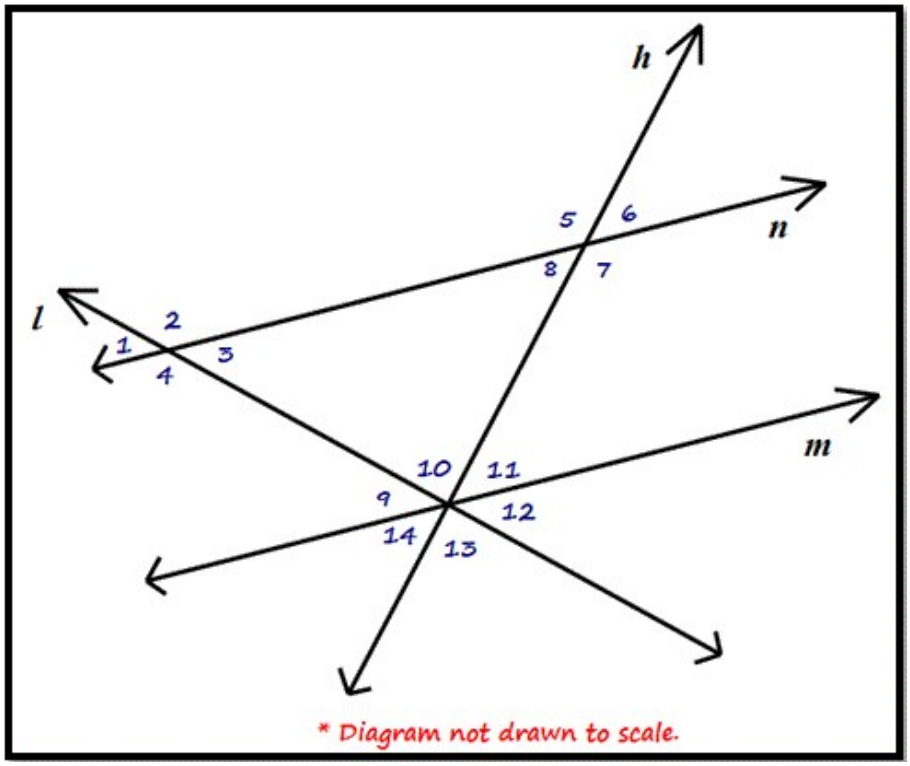
4 $\frac{a^2}{125b^5}$

8

Figure 1

In the diagram below:

- line n is parallel to line m
- m$\angle$ 5 = 132°
- m$\angle$ 9 = 43°
- lines h and l are transversals



Refer to Figure 1 and answer the following Question:
What is the measure of $\angle$ 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 $9w^{3}$

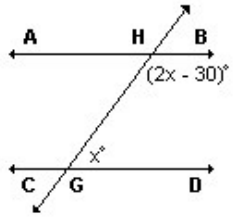
16 The distance to the Moon from Earth is 5.05×10^{8} miles. The distance to the Pluto is 5.05×10^{16} miles. How many times the distance to the Moon is it to Pluto?

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?

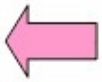
1 Multiply by 1,000.
2 Divide by 1,000.
3 Divide by 100.
4 Multiply by 100.

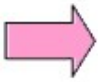
18 In the diagram, transversal $\overleftrightarrow{GH}$ intersects parallel lines $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$, m$\angle$ $DGH = x$, and m$\angle$ $BHG = 2x - 30$.



Find the value of x.

1 30
2 50
3 70
4 110

19 Which is a 180° rotation of the figure  ?

1 
2 
3 
4 

20 Which expression is equivalent to $(3x^2)^{-1}$?

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