

**Directions:** Complete the following problems. Show all of your work. You MUST write your answer in the answer blank. Remember to include labels when necessary!

1) Simplify: $2(3 - x) - 12 + 4x$	2) Solve: $2x + 3x + 5 = 15$																										
3) Solve: $3x - 5 = 16$	4) Simplify: $-6(2x - 9)$																										
<p>5) Which statement is true?</p> <table border="1" data-bbox="110 625 623 695"> <tr> <td>Ed</td><td>100</td><td>50</td><td>90</td><td>90</td><td>70</td><td>70</td><td>70</td> </tr> <tr> <td>Jo</td><td>70</td><td>60</td><td>80</td><td>90</td><td>90</td><td>100</td><td>80</td> </tr> </table> <p>A. Ed's median is higher than Jo's median.          B. Ed's median is lower than Jo's median.          C. Ed's median is the same than Jo's median.          D. The median scores cannot be determined.</p>	Ed	100	50	90	90	70	70	70	Jo	70	60	80	90	90	100	80	<p>6) Susan's weekly earnings are proportional to the number of hours she worked. How much money did Susan earn per hour?</p> <table border="1" data-bbox="656 741 1166 810"> <tr> <td>Hours</td><td>5</td><td>7</td><td>9</td><td>11</td> </tr> <tr> <td>\$</td><td>47.50</td><td>66.50</td><td>85.50</td><td>104.50</td> </tr> </table>	Hours	5	7	9	11	\$	47.50	66.50	85.50	104.50
Ed	100	50	90	90	70	70	70																				
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Hours	5	7	9	11																							
\$	47.50	66.50	85.50	104.50																							
7) Alberto earned \$24.50 last week delivering newspapers. He put \$7.35 in his savings account. Then he bought a magazine for \$2.95 and a CD for \$12.42. Of the amount earned last week, how much money does Alberto have left that is not in his savings account?	8) Alan received \$50 for his birthday. He then saved \$15 per week until he had a total of \$305 to buy a video game system. How many weeks did it take him to save the money?																										
9) The test scores for the students in Ms. Waters' math class are shown here. What is the range of test scores? 52 61 69 76 82 84 85 90 94	10) The following set of data shows the number of cars a company sold in the past 10 days. Find the mean. 1 5 3 2 1 0 4 2 6 1																										
11) Find the perimeter of a rectangle with dimensions 14 ft. by 11 ft.	12) Simplify: $(5^2 - 10) \div 5 \times 2$																										
13) A 14 inch candle and a 20 inch candle are lit at 2:00pm. The 14in candle burns 0.5 inches every hour. The 20in. candle burns two inches every hour. At what time will the two candles be the same height?	14) Kylie bought some pencils. She paid \$1.24, including tax, per pencil. She gave the cashier \$20 and received \$5.12 in change. How many pencils did Kylie purchase?																										
15) Jenny has finished 12 of the 20 lessons in her piano book. Liam has finished the same percent of lessons from his piano book. His book contains 30 lessons. How many lessons has Liam finished?																											

**Answers**

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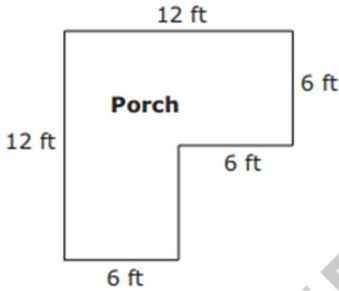
13) \_\_\_\_\_

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15) GRID RESPONSE

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4	4	4	4	4	4
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6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

**Directions:** Complete the following problems. Show all of your work. You MUST write your answer in the answer blank. Remember to include labels when necessary!

1) Simplify: $4(2b - 4)$	2) Simplify: $5(3x - 8)$															
3) Simplify: $2[(4 + 11) \div (12 - 7)]$	4) Solve: $\frac{x}{3} + 2 = 5$															
5) Find the volume of a cube with a side length of 8 centimeters.	6) Evaluate when $x=3$ : $\frac{1}{3}x^2 + 2$															
7) If $y-18=14$ , what is the value of $3(y+5)$ ?	8) Solve: $-2 = 5x + 3$															
9) The price of a theater ticket increased from \$7.50 to \$7.75. The theater sold 315 tickets at the higher price. With the price increase, how much more did the theater earn on the tickets?	10) Which has the lowest price per ounce? <table border="1" style="margin: 10px auto; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Store</th> <th>Size (ounces)</th> <th>Price</th> </tr> </thead> <tbody> <tr> <td>Hawkin's Store</td> <td>60</td> <td>\$6.50</td> </tr> <tr> <td>Don's Store</td> <td>54</td> <td>\$5.50</td> </tr> <tr> <td>Allen's Market</td> <td>48</td> <td>\$5.61</td> </tr> <tr> <td>Value Market</td> <td>40</td> <td>\$4.50</td> </tr> </tbody> </table>	Store	Size (ounces)	Price	Hawkin's Store	60	\$6.50	Don's Store	54	\$5.50	Allen's Market	48	\$5.61	Value Market	40	\$4.50
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11) Joe will go to the swimming pool on 20 different days this month. A one-day pass to the pool is \$2.25. A monthly pass to the pool is \$30.00. How much money will Joe save by buying a monthly pass?	12) Michael started a savings account with \$300. After 5 weeks, he had \$350 dollars, and after 10 weeks, he had \$400. What is the rate of change of money in his savings account per week?															
13) Marcy is taking two types of medicine. She takes one medicine every 6 hours. She takes the other medicine every 4 hours. She takes both medicines at 9:00 a.m. At what time will Marcy take both medicines together again?	14) How many square feet of carpet are needed to carpet the porch? 															
15) The ratio of nitrogen to potassium in a sample of soil is 12:9. The sample has 36 units of nitrogen. How much potassium does the sample have?																

**Answers**

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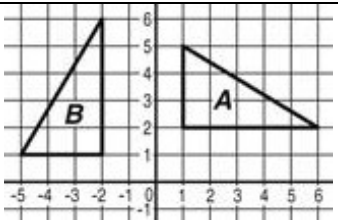
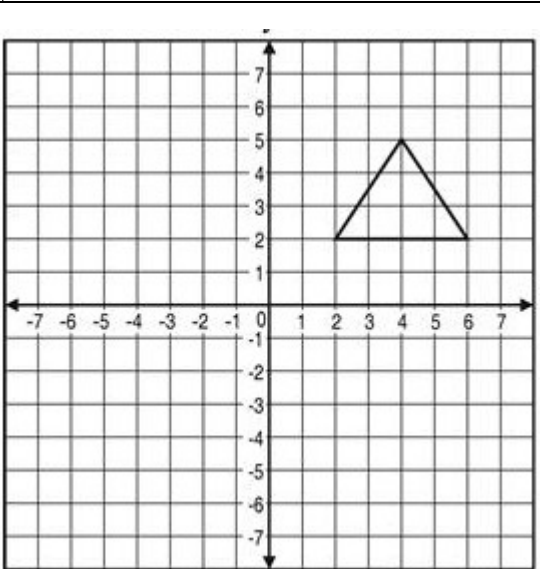
13) \_\_\_\_\_

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15) GRID RESPONSE

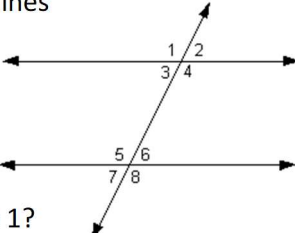
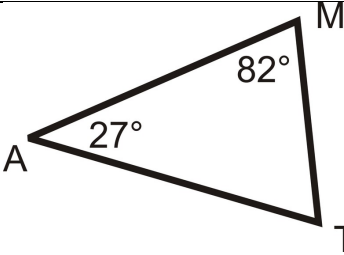
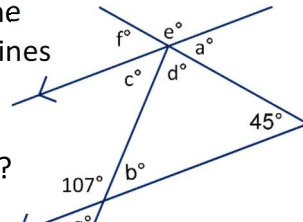
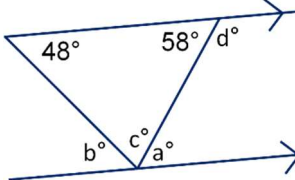
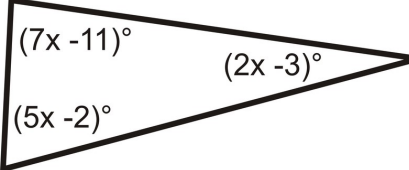
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0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

**Directions:** Complete the following problems. Show all of your work. You **MUST** write your answer in the answer blank. Remember to include labels when necessary!

1) Simplify: $3(n - 8) + 12 + 2n$	2) Simplify: $4 + (9 \cdot 2) \div (4 - 1) - 4$
3) Solve: $16 + x = 12$	4) Solve: $-4 = -17 + x$
5) Solve: $-2x + 6 = 28$	6) Solve: $-7 = 2x - 7$
7) Jacob is 12 years younger than twice Elizabeth's age. Jacob is 28 years old. How old is Elizabeth?	8) The lowest point of the St. Lawrence River is 294 feet below sea level. The top of Mt. Jacques Cartier is 1,277 feet above sea level. How many feet higher is the top of Mt. Jacques Cartier than the lowest point of the St. Lawrence River?
9) Find the perimeter of a square that has an area of $144 \text{ in}^2$ .	10) The square root of 64 is how much smaller than $6^2 \cdot 4$ ?
11) Triangle A went through what type of transformation to end at triangle B? 	12) A bag contains orange blocks and pink blocks. The ratio of orange blocks to pink blocks is 2 to 11. If 121 pink blocks are in the bag, how many orange blocks are in the bag?
13) Write $14/20$ as a decimal.	14) What is the sum of the first 5 perfect squares? (HINT: perfect squares are numbers to the second power)
15) The triangle in the graph will be reflected of the x-axis and then reflected over the y-axis. Which sequence of transformations would result in the same image? <ul style="list-style-type: none"> <li>A. a reflection over the diagonal line <math>y = x</math></li> <li>B. rotation 180 degrees counterclockwise about the origin</li> <li>C. reflection over the y-axis and a translation of 4 units down</li> <li>D. rotation 90 degrees clockwise about the origin and a translation of 4 units left</li> </ul>	

<u>Answers</u>	
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**Directions:** Complete the following problems. Show all of your work. You MUST write your answer in the answer blank. Remember to include labels when necessary!

1) Simplify: $-10 + 7x + 24 - 2x$	2) Simplify: $-17 + 2(6x - 1) + 5$
3) Solve: $-23 = x - 23$	4) Solve: $-2x + 8 = -26$
5) Solve: $4 + x - 17 = 22$	6) Solve: $-18 = -3x + 6$
7) Find the side length of a square rug that has an area of 169 square centimeters.	8) Simplify: $3^4$
<p>9) Two parallel lines are cut by a transversal. If the measure of angle 4 is <math>97^\circ</math>, what is the measure of angle 1?</p> 	<p>10) What is the measure, in degrees, of angle T?</p> 
<p>11) Given that the top and bottom lines are parallel, what is the sum of angles a and d?</p> 	<p>12) Given that the top and bottom lines are parallel, what is the measure of angle a?</p> 
13) Use proper math vocabulary: Translations, reflections, and rotations create images that are always _____.	14) Triangle JKL has vertices J(2,4), K(3,1), and L(3,3). A translation maps the point J to J'(3,3). What are the coordinates of K'?
15) Solve for x. (HINT: write an equation setting the sum of the angles equal to the number of degrees in a triangle.)	

**Answers**

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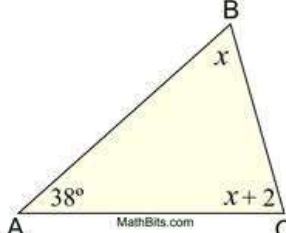
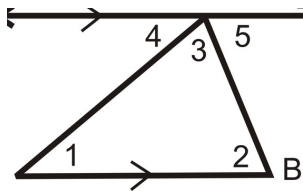
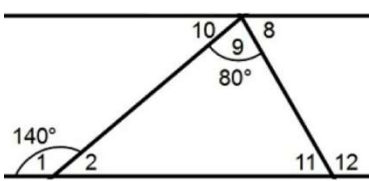
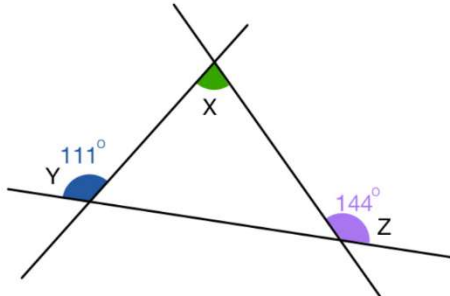
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15) GRID RESPONSE

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8	8	8	8	8	8
9	9	9	9	9	9

**Directions:** Complete the following problems. Show all of your work. You MUST write your answer in the answer blank. Remember to include labels when necessary!

1) Simplify: $-4(x + 2) - \frac{1}{2}(2x - 6)$	2) Simplify: $20 - (4 \cdot 2) \div (5 - 3) - 2$
3) Solve: $47 = -2 - 7x$	4) Solve: $-3x = 15$
5) Solve: $2x + 12 - 7x = 2$	6) Solve: $3x + 15 - 7x = -9$
7) The perimeter of a square is 24 inches. What is the area of the square?	8) A square has an area of 225 square inches. What is the square's perimeter?
9) Triangle ABC has vertices at A(1, 2), B(-3, 4), and C(5, 0). What would be the coordinates of B' after a dilation with a scale factor of 0.5?	10) Triangle ABC has vertices at A(1, 2), B(-3, 4), and C(5, 0). What would be the coordinates of A' after a dilation with a scale factor of 2.5?
11) Triangle D'E'F' was dilated about the origin and has vertices at D'(1.5, 3), E'(0, 1.5) and F'(-3, 1.5). If the original coordinates were D(1, 2), E(0, 1), and F(-2, 1), what is the scale factor?	12) What is the value of x? 
13) Angle 2 is congruent to which angle? 	14) What is the sum of angles 2 and 11? 
15) What is the measure of angle x? 	

**Answers**

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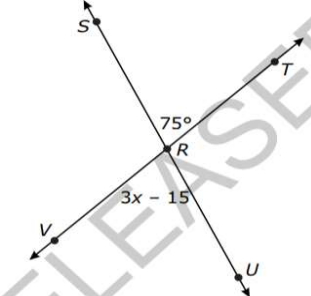
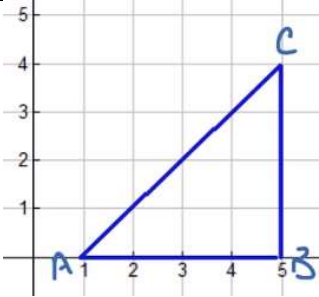
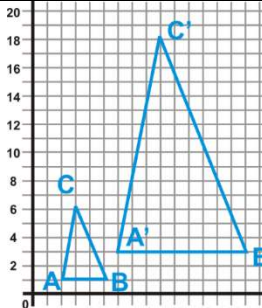
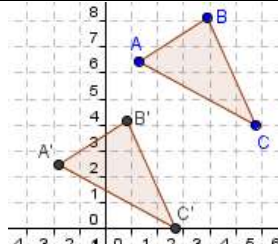
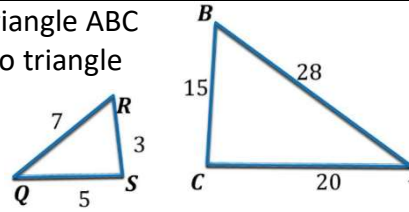
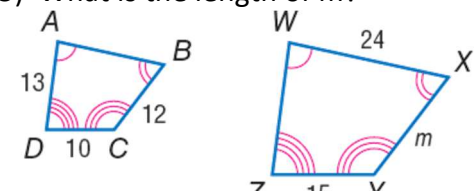
13) \_\_\_\_\_

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15) GRID RESPONSE

0	1	2	3	4	
5	6	7	8	9	

**Directions:** Complete the following problems. Show all of your work. You **MUST** write your answer in the answer blank. Remember to include labels when necessary!

1) Simplify: $-3(3y - 2x) + 2(5x - 4y)$	2) Simplify: $\frac{1}{2}(4x - 8) - 2(3x - 1)$
3) Solve: $\frac{-x}{3} = 9$	11. Solve: $3x - 4 + 20 = 55$
5) Solve: $2x + 18 - 1 = 33$	6) Solve: $-7 = -1 + \frac{x}{3}$
7) SU intersects TV at point R. What is the value of x, in degrees? 	8) Angles T and V are complementary meaning they form a right angle. Angle T has a measure of $(2x + 10)^\circ$ . Angle V has a measure of $48^\circ$ . What is the value of x?
9) Write an expression: six less than x	10) Write an expression: the quotient of fifteen and the product of two and x
11) What are the coordinates of C' after a dilation with a scale factor of $\frac{1}{2}$ ? 	12) What is the scale factor? 
13) Describe the transformation performed. 	14) Is triangle ABC similar to triangle QRS? 
15) What is the length of m? 	

**Answers**

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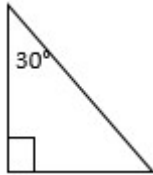
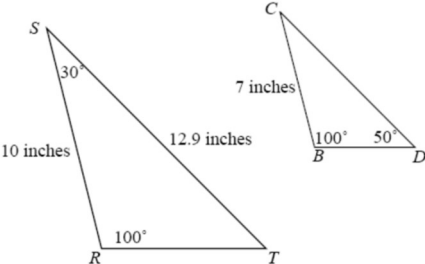
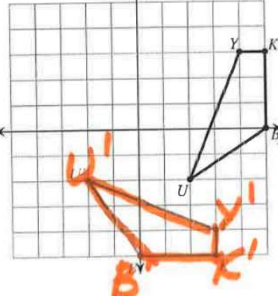
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15) GRID RESPONSE

0	1	2	3	4	
5	6	7	8	9	
0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
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7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9



**Directions:** Complete the following problems. Show all of your work. You MUST write your answer in the answer blank. Remember to include labels when necessary!

1) Simplify: $-5(9 - 3x) - 9$	2) Simplify: $8 - 3(1 + 3m)$								
3) Solve: $4 = \frac{2}{7}x$	4) Solve: $\frac{-2}{5}x = 3$								
5) Solve: $\frac{3}{4}x + 4 = 22$	6) Solve: $-5 = \frac{3}{4}x - 2$								
7) Tony bought a \$48 sweatshirt and used a coupon for a 10% discount. Keith bought an identical sweatshirt at a different store for \$42.95. Which statement is true? A. Tony paid \$0.25 less than Keith paid B. Tony paid \$4.95 less than Keith paid C. Keith paid \$0.25 less than Tony paid D. Keith paid \$4.95 less than Tony paid	8) Which equation models the relationship show in the table?  <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;"><b>x</b></td> <td style="padding: 2px 5px;">3</td> <td style="padding: 2px 5px;">6</td> <td style="padding: 2px 5px;">11</td> </tr> <tr> <td style="padding: 2px 5px;"><b>y</b></td> <td style="padding: 2px 5px;">163.5</td> <td style="padding: 2px 5px;">327</td> <td style="padding: 2px 5px;">599.5</td> </tr> </table> A. $y = 53x$ B. $y = 53.5x$ C. $y = 54x$ D. $y = 54.5x$	<b>x</b>	3	6	11	<b>y</b>	163.5	327	599.5
<b>x</b>	3	6	11						
<b>y</b>	163.5	327	599.5						
9) Erica saw a skateboard on sale for \$59.95. The original price of the skateboard was \$79.95. What is the approximate percent discount? A. 20%   B. 25%   C. 75%   D. 80%	10) What is the missing acute angle measurement?  								
11) This diagram is a scale drawing of a store where 1 inch = 16 feet. To the nearest 50 ft <sup>2</sup> , what is the actual area of the actual store? A. 2350ft <sup>2</sup> B. 2400ft <sup>2</sup> C. 2450ft <sup>2</sup> D. 2500ft <sup>2</sup>	12) The triangles below are similar. What is the measure of segment CD?  								
13) Triangle MIB has coordinates at I (-1,0), M(-1,1) and B (1,0). What are the coordinates of B' after a dilation with a scale factor pf 4.5?	14) This image shows a rotation of _____ degrees in a _____ direction.  								
15) Triangle DOG has coordinates at D (-1,-2), O(-3,3), and G (1,3). It's image after a dilation has coordinates at D' (-1.5, -3), O'(-4.5, 4.5) and G' (1.5, 4.5). What is the scale factor?									

**Answers**

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15) GRID RESPONSE

0	1	2	3	4	5
6	7	8	9	0	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9