

# ALEKS® Final Prep Quiz 1 #1

Beginning and Intermediate Algebra Combined / MATH 102 - Fall 2014 – 504 (Prof. Miller)

Student Name/ID:

**Instructor Note:**

Directions: Every problem is worth two points. One point is for trying the problem and showing your work and one point is for getting the correct answer. There are an additional five points for demonstrating the study strategy that is posted on the board and talked about at the beginning of class.

1. Find the  $x$ -intercept(s) and the coordinates of the vertex for the parabola  $y = x^2 - 6x - 7$ . If there is more than one  $x$ -intercept, separate them with commas.
2. Rachel invested her savings in two investment funds. The amount she invested in Fund A was 4 times as much as the amount she invested in Fund B. Fund A returned a 6% profit and Fund B returned a 5% profit. How much did she invest in Fund B, if the total profit from the two funds together was \$3480?
3. The sum of two numbers is 42. One number is 2 times as large as the other. What are the numbers?
4. Solve.

$$(5y + 4)(1 + y) = 0$$

(If there is more than one solution, separate them with commas.)

5. The cost  $C$  (in dollars) of manufacturing  $x$  wheels at Ravi's Bicycle Supply is given by the function  $C(x) = 0.5x^2 - 170x + 25,850$ . What is the minimum cost of manufacturing wheels?

Do not round your answer.

6. For each relation, decide whether or not it is a function.

<p>Relation 1</p> <table border="0"> <thead> <tr> <th>Domain</th> <th>Range</th> </tr> </thead> <tbody> <tr> <td>desk</td> <td rowspan="4">-8</td> </tr> <tr> <td>paper</td> </tr> <tr> <td>sun</td> </tr> <tr> <td>rock</td> </tr> </tbody> </table> <p> <input type="radio"/> Function  <input type="radio"/> Not a Function         </p>	Domain	Range	desk	-8	paper	sun	rock	<p>Relation 2</p> <table border="0"> <thead> <tr> <th>Domain</th> <th>Range</th> </tr> </thead> <tbody> <tr> <td>cloud</td> <td>c</td> </tr> <tr> <td>star</td> <td>s</td> </tr> <tr> <td>pencil</td> <td>d</td> </tr> <tr> <td>pen</td> <td>c</td> </tr> </tbody> </table> <p> <input type="radio"/> Function  <input type="radio"/> Not a Function         </p>	Domain	Range	cloud	c	star	s	pencil	d	pen	c
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<p>Relation 3</p> <p><math>\{(-3, -3), (-3, -4), (-3, 9), (-5, 0)\}</math></p> <p> <input type="radio"/> Function  <input type="radio"/> Not a Function         </p>	<p>Relation 4</p> <p><math>\{(k, k), (b, g), (g, k), (g, g)\}</math></p> <p> <input type="radio"/> Function  <input type="radio"/> Not a Function         </p>																	

7. Factor  $6y^2 + 9y^3$

8. Solve.

$$(1 - w)(5w + 4) = 0$$

(If there is more than one solution, separate them with commas.)

9. Find the perimeter of the square. Be sure to write the correct unit in your answer.



10. Factor completely:

$$32u^2 - 2u^2v^4$$

11. Solve for  $w$

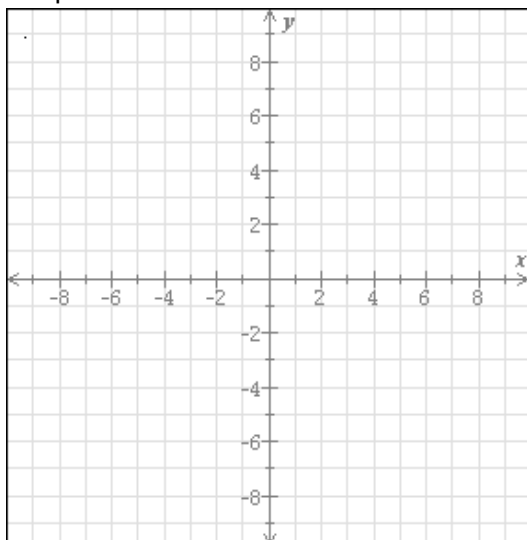
$$5w^2 = -17w - 6$$

12. Fill in the table using this function rule.

$$y = -5x + 2$$

$x$	$y$
-1	
0	
1	
2	

13. Graph the line  $x = -1$



14. Two systems of equations are given below.  
For each system, choose the best description of its solution.  
If applicable, give the solution.

$\begin{aligned} x + 5y &= 5 \\ -x - 5y &= 5 \end{aligned}$	<p><input type="radio"/> The system has no solution.</p> <p><input type="radio"/> The system has a unique solution:</p> <p><math>(x, y) = (\square, \square)</math></p> <p><input type="radio"/> The system has infinitely many solutions. They must satisfy the following equation:</p> <p><math>y = \square</math></p>
$\begin{aligned} x + 3y &= 3 \\ -x - 3y &= -3 \end{aligned}$	<p><input type="radio"/> The system has no solution.</p> <p><input type="radio"/> The system has a unique solution:</p> <p><math>(x, y) = (\square, \square)</math></p> <p><input type="radio"/> The system has infinitely many solutions. They must satisfy the following equation:</p> <p><math>y = \square</math></p>

15. Raina invested her savings in two investment funds. The amount she invested in Fund A was 3 times as much as the amount she invested in Fund B. Fund A returned a 4% profit and Fund B returned a 6% profit. How much did she invest in Fund B, if the total profit from the two funds together was \$1080?

# Final Prep Quiz 1 #1 Answers for class Beginning and Intermediate Algebra Combined / MATH 102 - Fall 2014 – 504

1. x-intercept(s): 7 , -1  
vertex: (3, -16)

2. Amount invested in Fund B: \$12,000

3. Larger number: 28  
Smaller number: 14

4.  $y = -\frac{4}{5}$  , -1

5. Cost: \$11,400

6.

Relation 1		Relation 2	
Domain	Range	Domain	Range
desk	-8	cloud	c, s, d
paper		star	
sun		pencil	
rock		pen	
<input checked="" type="radio"/> Function <input type="radio"/> Not a Function		<input type="radio"/> Function <input checked="" type="radio"/> Not a Function	

Relation 3	Relation 4
$\{(-3, -3), (-3, -4), (-3, 9), (-5, 0)\}$	$\{(k, k), (b, g), (g, k), (g, g)\}$
<input type="radio"/> Function <input checked="" type="radio"/> Not a Function	<input type="radio"/> Function <input checked="" type="radio"/> Not a Function

7.  $3y^2(2 + 3y)$

8.  $w = 1$  ,  $-\frac{4}{5}$

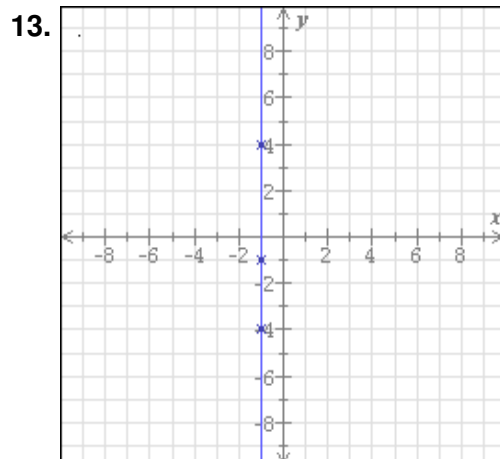
9. 108 cm

10.  $2u^2(2 - v)(2 + v)(4 + v^2)$

11.  $-\frac{2}{5}$  , -3

12.

$x$	$y$
-1	7
0	2
1	-3
2	-8



14.

$x + 5y = 5$ $-x - 5y = 5$	<p><input checked="" type="radio"/> The system has no solution.</p> <p><input type="radio"/> The system has a unique solution:</p> $(x, y) = (\square, \square)$ <p><input type="radio"/> The system has infinitely many solutions.</p> <p>They must satisfy the following equation:</p> $y = \square$
$x + 3y = 3$ $-x - 3y = -3$	<p><input type="radio"/> The system has no solution.</p> <p><input type="radio"/> The system has a unique solution:</p> $(x, y) = (\square, \square)$ <p><input checked="" type="radio"/> The system has infinitely many solutions.</p> <p>They must satisfy the following equation:</p> $y = -\frac{x}{3} + 1$

15. Amount invested in Fund B: \$6000