

ALEKS® Final Prep Quiz 3 #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. 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: $(x, y) = (\square, \square)$</p> <p><input type="radio"/> The system has infinitely many solutions. They must satisfy the following equation: $y = \square$</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: $(x, y) = (\square, \square)$</p> <p><input type="radio"/> The system has infinitely many solutions. They must satisfy the following equation: $y = \square$</p>

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



5. Factor by grouping.

$$5y^3 - 2y^2 - 35y + 14$$

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

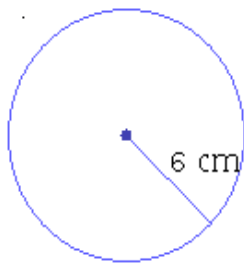
7. Fill in the table using this function rule.

$$y = -5x + 2$$

x	y
-1	
0	
1	
2	

8. Find the area and the circumference of a circle with radius 6 cm

Use the value 3.14 for π and do not round your answers. Be sure to include the correct units in your



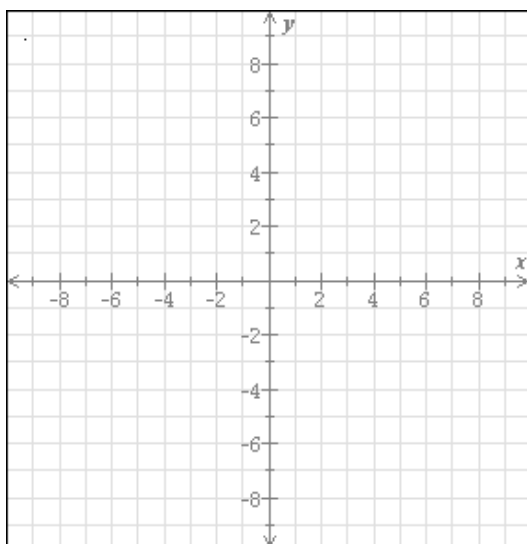
answers.

9. Factor:

$$5x^2 - 3xy - 14y^2$$

10. Graph the parabola.

$$y = (x - 1)^2 - 3$$



11. Simplify.

$$\sqrt{45}$$

12. Solve for u

$$|u| - 16 = -8$$

13. 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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14. The functions f and g are defined as follows.

$$f(x) = -3x + 2 \quad g(x) = 3x^3 + 5$$

Find $f(3)$ and $g(-3)$

Simplify your answers as much as possible.

15. Multiply.

$$(u + 7)(u - 7)$$

Simplify your answer.

Final Prep Quiz 3 #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.
- | | |
|--|--|
| $\begin{aligned}x + 5y &= 5 \\ -x - 5y &= 5\end{aligned}$ | <p><input checked="" type="radio"/> The system has no solution.</p> <p><input type="radio"/> The system has a unique solution:
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$y = -\frac{x}{3} + 1$</p> |

4. 108 cm

5. $(5y - 2)(y^2 - 7)$

6. $3y^2(2 + 3y)$

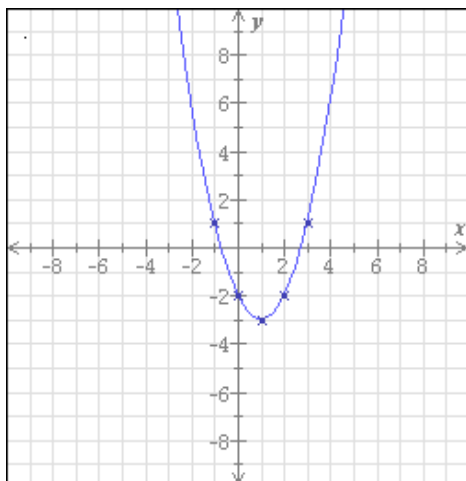
- 7.
- | x | y |
|----|----|
| -1 | 7 |
| 0 | 2 |
| 1 | -3 |
| 2 | -8 |

8. Area: 113.04 cm²

Circumference: 37.68 cm

9. $(x - 2y)(5x + 7y)$

10.



11. $3\sqrt{5}$

12. $u = 8, -8$

13.

<p>Relation 1</p> <p>Domain Range</p> <p>desk</p> <p>paper</p> <p>sun</p> <p>rock</p> <p>-8</p> <p><input checked="" type="radio"/> Function</p> <p><input type="radio"/> Not a Function</p>	<p>Relation 2</p> <p>Domain Range</p> <p>cloud</p> <p>star</p> <p>pencil</p> <p>pen</p> <p>c</p> <p>s</p> <p>d</p> <p><input type="radio"/> Function</p> <p><input checked="" type="radio"/> Not a Function</p>
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14. $f(3) = -7$
 $g(-3) = -76$

15. $u^2 - 49$