ALEKS® Quadratic Equations Quiz #1

Beginning and Intermediate Algebra Combined / MATH 103 - 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. Solve $u^3 = 4$ where u is a real number.
Simplify your answer as much as possible.

2. Solve $x^2 = 63$ where x is a real number.
Simplify your answer as much as possible.

3. Use the quadratic formula to solve for x.

$$2x^2 + 5x - 1 = 0$$

4. Find all real number solutions.

$$x + 7\sqrt{x} - 18 = 0$$

5. Solve $(v-7)^2-32=0$ where v is a real number.
Simplify your answer as much as possible.

6. Solve.

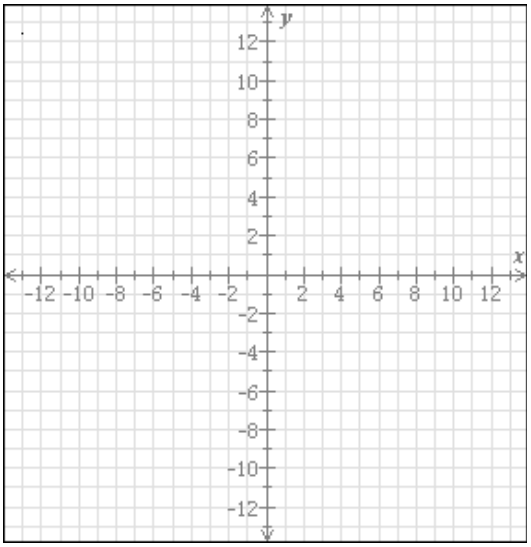
$$x^4-37x^2+36=0$$

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

7. Solve $(v+9)^{\frac{4}{5}}=2$ where v is a real number.
Simplify your answer as much as possible.

8. Graph the parabola.

$$y=3x^2+12x+5$$

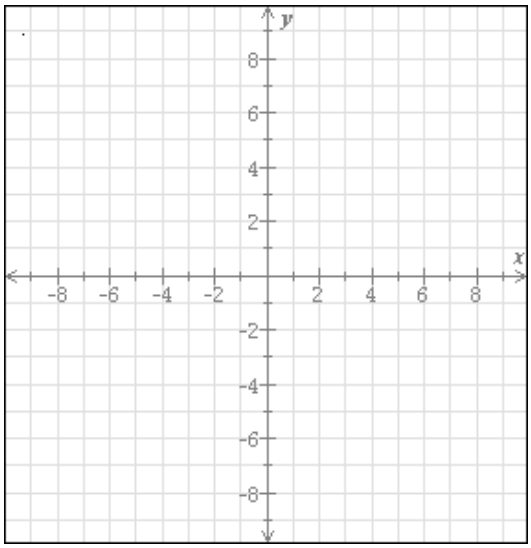


9. The cost C (in dollars) of manufacturing x wheels at Ravi's Bicycle Supply is given by the function $C(x) = 0.5x^2 - 170x + 25{,}850$ What is the minimum cost of manufacturing wheels?

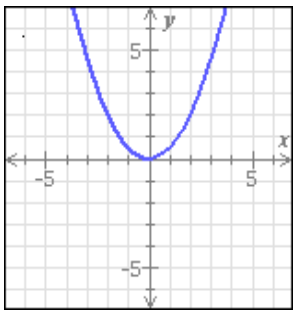
Do not round your answer.

10. Graph the parabola.

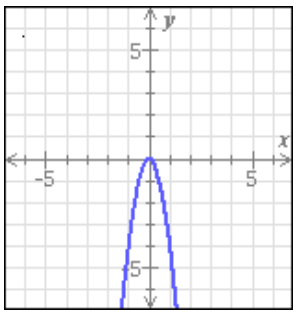
$$y = (x-1)^2 - 3$$



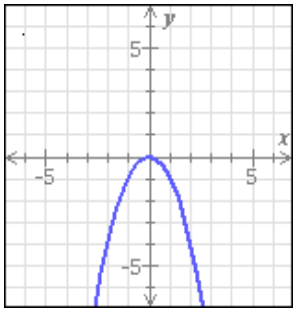
11. Look at the graphs and their equations below. Then fill in the information about the leading coefficients A, B, C, and D.



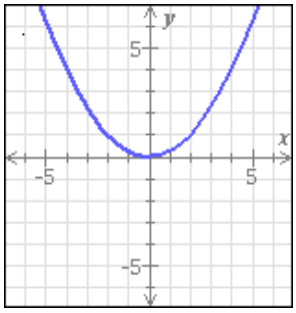
$y = Ax^2$



$y = Bx^2$



$y = Cx^2$



$y = Dx^2$

	A	***B***	***C***	***D***
(a) For each coefficient, choose whether it is positive or negative	- Positive - Negative	- Positive - Negative	- Positive - Negative	- Positive - Negative
(b) Choose the coefficient closest to 0	○	○	○	○
(c) Choose the coefficient with the greatest value	○	○	○	○

12.

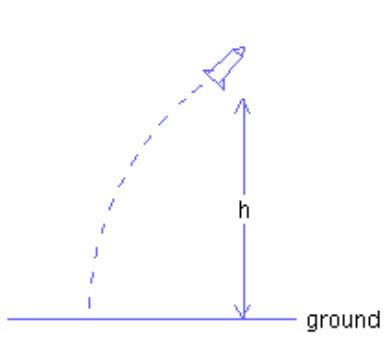
Solve $9v^{-\frac{1}{5}} = -6$ where v is a real number.
Simplify your answer as much as possible.

13. A model rocket is launched with an initial upward velocity of $235\,\text{ft/s}$ The rocket's height h (in feet) after t seconds is given by the following.

$$h = 235\,t - 16\,t^2$$

Find all values of t for which the rocket's height is 151 feet.

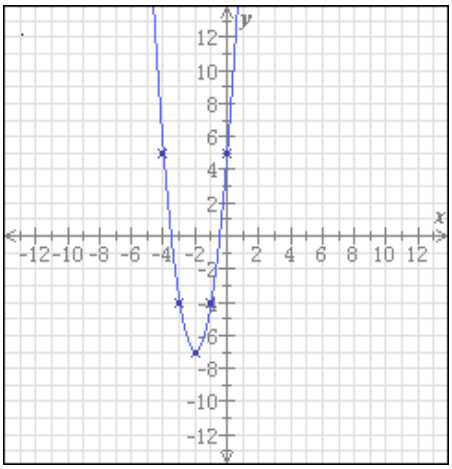
Round your answer(s) to the nearest hundredth.
(If there is more than one answer, use the "or" button.)

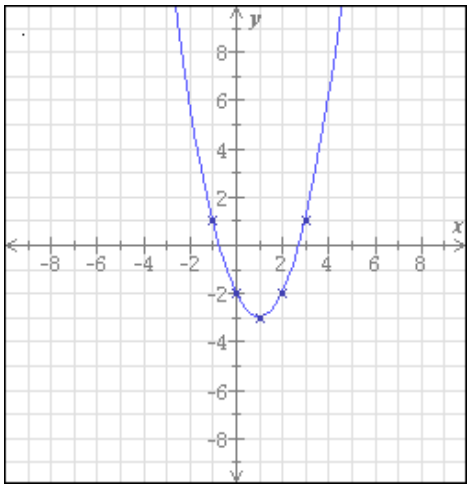


14. Find the x-intercept(s) and the coordinates of the vertex for the parabola $y = x^2 - 6x - 7$ If there is more than one x-intercept, separate them with commas.

15. Solve $(u-9)^3 - 56 = 0$ where u is a real number.
Write your answer in simplified radical form.

Quadratic Equations Quiz #1 Answers for class Beginning and Intermediate Algebra Combined / MATH 103 - Fall 2014 – 504

1. $u = \sqrt[3]{4}$
2. $x = 3\sqrt{7} - 3\sqrt{7}$
3. $\frac{-5+\sqrt{33}}{4}, \frac{-5-\sqrt{33}}{4}$
4. $x = 4$
5. $v = 7+4\sqrt{2}, 7-4\sqrt{2}$
6. $x = 1, -1, 6, -6$
7. $v = 2\sqrt[4]{2} - 9, -2\sqrt[4]{2} - 9$
8. 

9. Cost: $11,400
10. 

11.

	A	***B***	***C***	***D***
(a) For each coefficient, choose whether it is positive or negative	**- Positive** - Negative	- Positive **- Negative**	- Positive **- Negative**	**- Positive** - Negative
(b) Choose the coefficient closest to 0	○	○	○	◉
(c) Choose the coefficient with the greatest value	◉	○	○	○

12. $v = -\frac{243}{32}$

13. $t = 0.67$ seconds
or $t = 14.01$ seconds

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

15. $u = 2\sqrt[3]{7}+9$