

ALEKS® Rationals, Radicals, and Quads Quiz #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 domain of the function.

$$f(x) = \sqrt{-x+9}$$

Write your answer using interval notation.

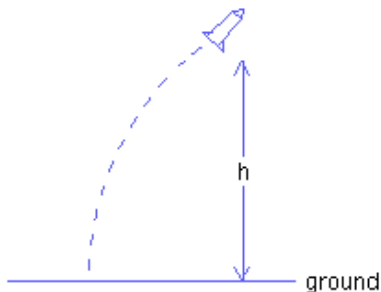
2. A model rocket is launched with an initial upward velocity of 235 ft/s. The rocket's height h (in feet) after t seconds is given by the following.

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

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.)

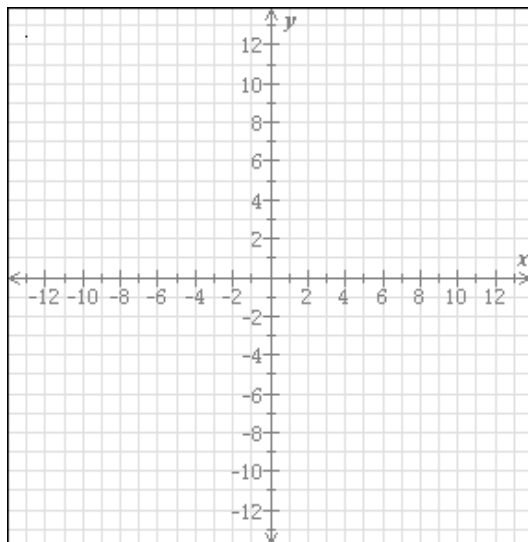


3. Simplify.

$$\sqrt{45}$$

4. Graph the parabola.

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



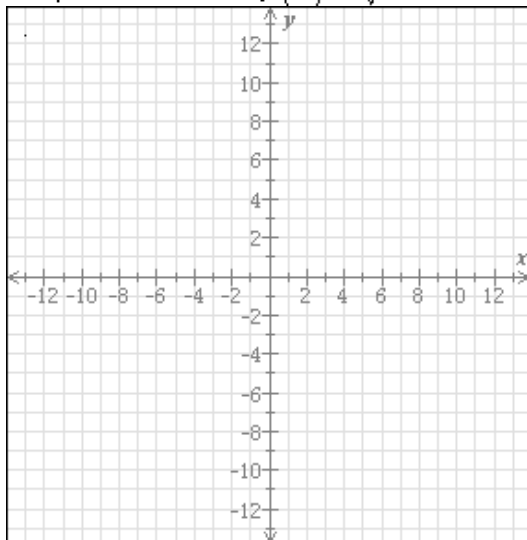
5. The cost C (in dollars) of manufacturing x wheels at Ravi's Bicycle Supply is given by the function

$$C(x) = 0.5x^2 - 170x + 25,850$$

What is the minimum cost of manufacturing wheels?

Do not round your answer.

6. Graph the function $f(x) = \sqrt{x+3}$



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

8. Simplify.

$$\sqrt{\frac{9}{49}}$$

Be sure to write your answer in simplest form.

9. Find the least common multiple of $10m^4$ and $8a^3$

10. Solve.

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

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

11. Find the least common multiple of these two expressions.

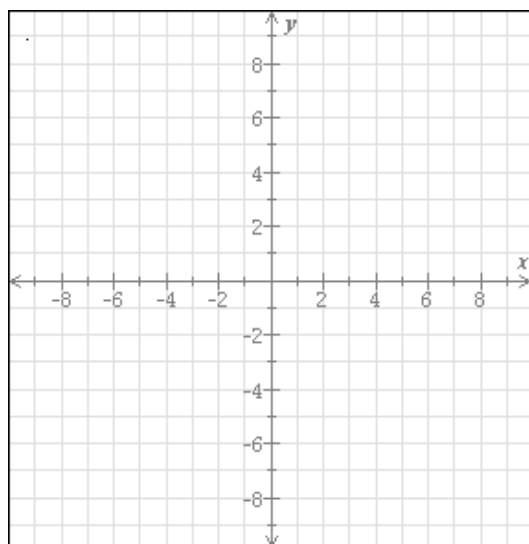
$$6y^4u^6v^2 \text{ and } 21u^8v^7$$

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

13. 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.

14. Graph the parabola.

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



15. Use the quadratic formula to solve for x .

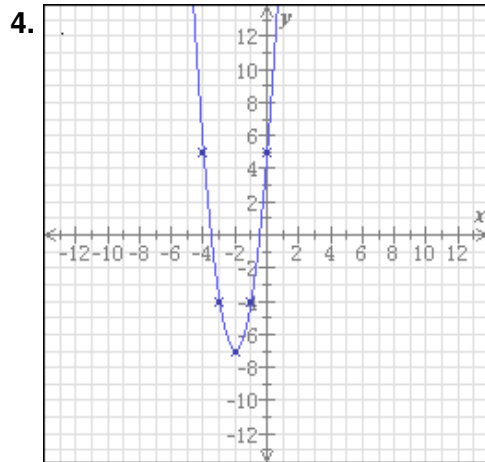
$$2x^2 + 5x - 1 = 0$$

Rationals, Radicals, and Quads Quiz #1 Answers for class Beginning and Intermediate Algebra Combined / MATH 102 - Fall 2014 – 504

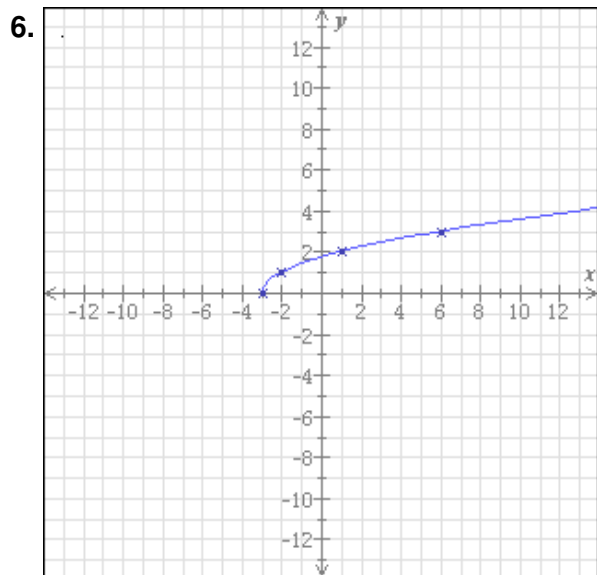
1. $(-\infty, 9]$

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

3. $3\sqrt{5}$



5. Cost: \$11,400



7. $v = 7 + 4\sqrt{2}, 7 - 4\sqrt{2}$

8. $\frac{3}{7}$

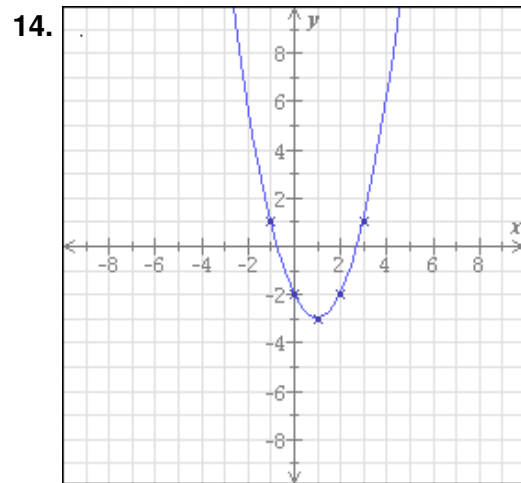
9. $40m^4a^3$

10. $x = 1, -1, 6, -6$

11. $42y^4u^8v^7$

12. $x = 3\sqrt{7} - 3\sqrt{7}$

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



15. $\frac{-5 + \sqrt{33}}{4}, \frac{-5 - \sqrt{33}}{4}$