ALEKS® Quadratics and Logs 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. Fill in the missing values to make the equations true.

(a) $\log_2 5 - \log_2 7 = \log_2 \square$

(b) $\log_5 \square + \log_5 11 = \log_5 99$

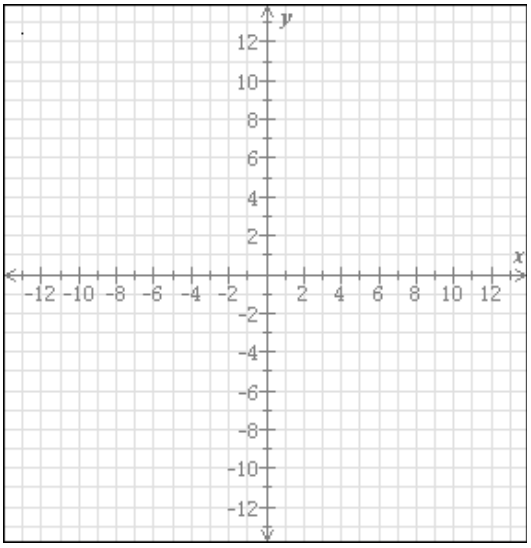
(c) $2\log_9 5 = \log_9 \square$

2. Find all real number solutions.

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

3. Graph the parabola.

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



4. Rewrite as an exponential equation.

$$\log_3 \frac{1}{81} = -4$$

$$\square^{\square} = \square$$

5. Compute $\log_8 6$

Round your answer to 3 decimal places.

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

7. 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.

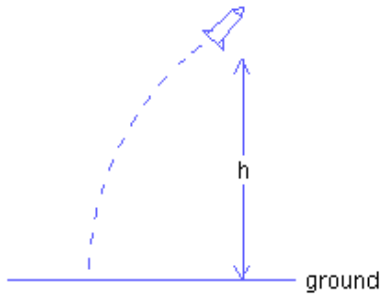
8. Solve $(v+9)^{\frac{4}{5}} = 2$ where v is a real number.
Simplify your answer as much as possible.

9. 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.

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

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.)



10. Evaluate.

$\log_3 27$

11. Solve for x

$\log_7 x = -2$

Simplify your answer as much as possible.

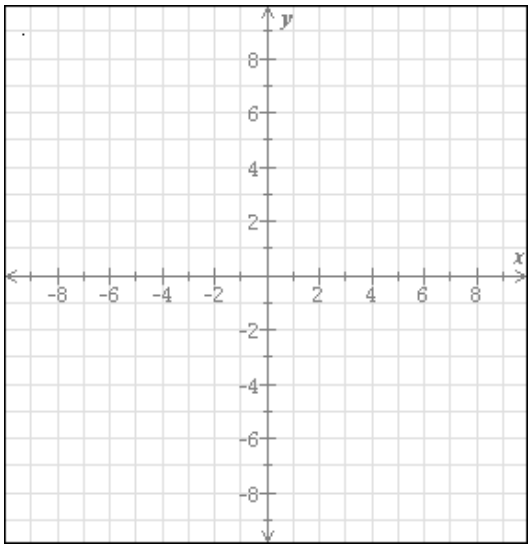
12. Solve $u^3 = 4$ where u is a real number.
Simplify your answer as much as possible.

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

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

15. Graph the parabola.

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



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

1.

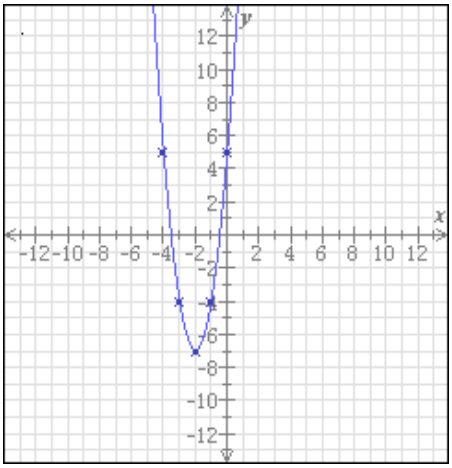
(a) $\log_2 5 - \log_2 7 = \log_2 \frac{5}{7}$

(b) $\log_5 9 + \log_5 11 = \log_5 99$

(c) $2\log_9 5 = \log_9 25$

2. $x = 4$

3.



4. $3^{-4} = \frac{1}{81}$

5. 0.862

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

7. Cost: \$11,400

8. $v = 2\sqrt[4]{2} - 9, -2\sqrt[4]{2} - 9$

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

10. $\log_3 27 = 3$

11. $x = \frac{1}{49}$

12. $u = \sqrt[3]{4}$

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

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

15.