Name Math 432 © 2014 Kuta Software LLC. All rights reserved. Quarter 1 Exam Review

Date

Solve each equation.

1)
$$2 + 10 |-5 - 4k| = -88$$

2) $3 + 7 |3p - 3| = 87$

3)
$$-\frac{15}{4}\left(x+\frac{1}{3}\right) = -\frac{327}{10} + \frac{9}{5}x$$
 4) $3k^2 + 2k = 16$

Solve each equation. Remember to check for extraneous solutions.

5)
$$\frac{1}{5k} = \frac{k+3}{k} - \frac{3}{5k^2}$$
 6) $\frac{x+5}{x+3} = 1 + \frac{1}{x^2 - 9}$

Solve each inequality and graph its solution.

7)
$$-3 |10n| - 9 < -99$$

 $-7 - 6 - 5 - 4 - 3 - 2 - 1 0 1 2 3 4 5 6 7$
8) $7 - 3 |x - 1| \ge -8$
 $-5 - 4 - 3 - 2 - 1 0 1 2 3 4 5 6 7$

Solve each compound inequality and graph its solution.

9)
$$3 + 8n < 5 + 8n$$
 or $5 + 7n \le 6n + 8$
 $\xrightarrow{-8 -7 -6 -5 -4 -3 -2 -1 0} 1 2 3 4 5 6$
10) $5r + 9 \ge -9 + 3r > -3 + 9r$
 $\xrightarrow{-10 -8 -6 -4 -2 0} 2$

Simplify each expression.

11)
$$\frac{a+1}{3a-1} \div \frac{2a+9}{6a^2+25a-9}$$
 12) $\frac{6a}{a-3} \cdot \frac{3a^2+3a-18}{18a^2-36a}$

Simplify.

13)
$$\frac{x^4 y^0 \cdot (x^{-4})^{-2}}{2x^{-3} y^{-2}}$$

14)
$$(6x^4 - 1 + 6x) - (5x^4 - 8x + 4)$$

15)
$$(7x^4 + 8 + x^2) + (x^2 - 7x^4 - 6x^3)$$

16)
$$(4x-3)(5x^2-7x-4)$$

Solve each word problem algebraically.

- 17) Jenny wants to make a 16% acid solution. She has already poured 2 L of a 40% acid solution into a beaker. How many L of a 12% acid solution must she add to this to create the desired mixture?
- 18) Huong left the mall and traveled toward the town hall at an average speed of 70 km/h. Mark left two hours later and traveled in the opposite direction with an average speed of 35 km/h. Find the number of hours Mark needs to travel before they are 350 km apart.

- 19) The ages of three family children can be expressed as consecutive integers. The square of the age of the youngest child is 4 more than eight times the age of the oldest child. Find the ages of the three children.
- 20) A collection of 33 coins, consisting of nickels, dimes, and quarters, has a value of \$3.30. If there are three times as many nickels as quarters, and one-half as many dimes as nickels, how many coins of each kind are there?

Answers to Quarter 1 Exam Review

