

Name: _____
Date: _____
Class: _____

Algebra
Review
Graded Homework 26

Show all of your work for every problem. The numbers in the brackets are the points that each problem is worth. Multiple Choice Problems are worth 3.
NO WORK = ZERO CREDIT

1) [3] Solve: $\frac{7}{3}\left(x + \frac{9}{28}\right) = 20$

2) [3] Solve (answers to the nearest hundredth): $x^2 - 6x - 12 = 0$

3) [3] What are the roots of the equation $x^2 + 4x - 16 = 0$?
(simplest radical form)

4) [3] Find the solution to the system of equations:

$$\begin{aligned}x + y &= 16 \\ 3x - y &= 4\end{aligned}$$

5) [3] If $f(x) = \frac{1}{3}x + 9$, which statement is always true?

(1) $f(x) < 0$

(3) If $x < 0$, then $f(x) < 0$.

(2) $f(x) > 0$

(4) If $x > 0$, then $f(x) > 0$.

- 6) [3] Christopher looked at his quiz scores shown below for the first and second semester of his Algebra class.

Semester 1: 78, 91, 88, 83, 94

Semester 2: 91, 96, 80, 77, 88, 85, 92

Which statement about Christopher's performance is correct?

- (1) The interquartile range for semester 1 is greater than the interquartile range for semester 2.
- (2) The median score for semester 1 is greater than the median score for semester 2.
- (3) The mean score for semester 2 is greater than the mean score for semester 1.
- (4) The third quartile for semester 2 is greater than the third quartile for semester 1.

- 7) [3] Draw the graph of $y = \sqrt{x} - 1$

- 8) [4]

The vertex of the parabola represented by $f(x) = x^2 - 4x + 3$ has coordinates $(2, -1)$. Find the coordinates of the vertex of the parabola defined by $g(x) = f(x - 2)$. Explain how you arrived at your answer.

- 9) [3] Factor the expression $x^4 + 6x^2 - 7$ completely.