

HW# _____

Name: _____

Equations Practice

1) Solve the following equations using u-substitution:

a. $3(1 - \sqrt{x})^2 + (1 - \sqrt{x}) - 2 = 0$

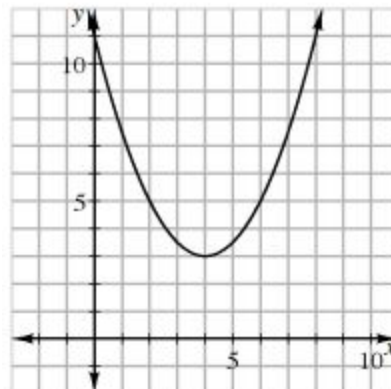
b. $(v^2 - 4v)^2 - 17(v^2 - 4v) + 60 = 0$

c. $x^{2/3} + 10 = 7x^{1/3}$

d. $\left(\frac{x^2 - 3}{x}\right)^2 + 2\left(\frac{x^2 - 3}{x}\right) + 1 = 0$

2.

The graph of $y = \frac{1}{2}(x - 4)^2 + 3$ is shown at right. Use the graph to solve each of the following equations. Explain how you get your answers.



a. $\frac{1}{2}(x - 4)^2 + 3 = 3$

b. $\frac{1}{2}(x - 4)^2 + 3 = 5$

c. $\frac{1}{2}(x - 4)^2 + 3 = 1$

d. $\frac{1}{2}(x - 4)^2 = 8$

3.

Solve each of the following systems of equations algebraically. What does the solution tell you about the graph of the system?

a.
$$\begin{aligned} y &= (x + 1)^2 + 3 \\ y &= 2x + 4 \end{aligned}$$

b.
$$\begin{aligned} x + y &= 0 \\ y &= (x - 4)^2 - 6 \end{aligned}$$