

Math 2

Section 3.4 Worksheet

Name

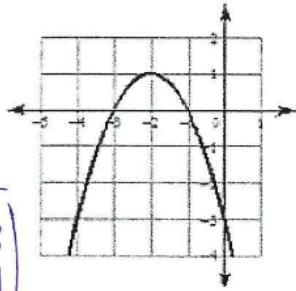
Key

Solving Quadratics with Graphing and Square Root Method.

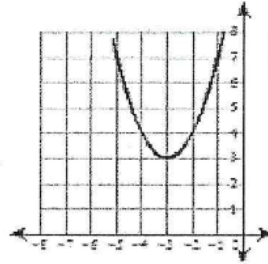
Use the related graph of each equations to determine its solutions.

1. $f(x) = -x^2 - 4x - 3$

2. $y = x^2 + 6x + 12$



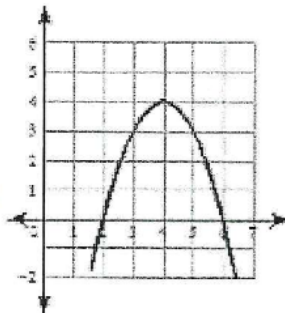
$x = -3$
 $x = -1$



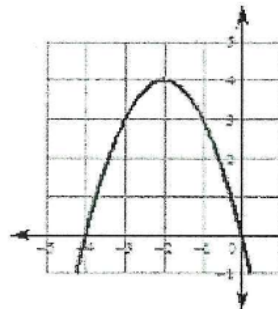
No real solutions

3. $f(x) = -x^2 + 8x - 12$

4. $f(x) = -x^2 - 4x$



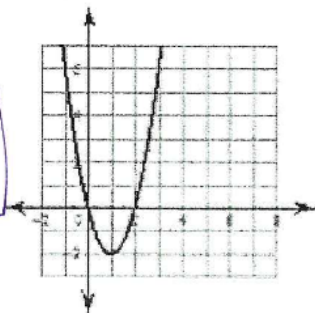
$x = 2$
 $x = 6$



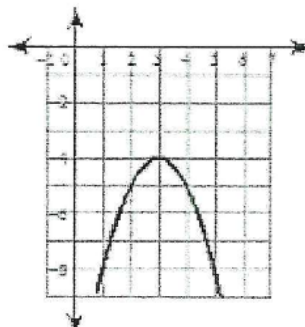
$x = -4$
 $x = 0$

5. $y = 2x^2 - 4x$

6. $f(x) = -x^2 + 6x - 13$



$x = 0$
 $x = 2$



No real solutions

Solve each equation.

7. $m^2 - 36 = 0$

$m^2 = 36$

$m = \pm 6$

8. $y^2 - 225 = 0$

$y^2 = 225$

$y = \pm 15$

9. $4d^2 + 16 = 16$

$-16 \quad -16$
 $\frac{4d^2}{4} = \frac{0}{4}$

$d^2 = 0$
 $d = 0$

10. $\sqrt{t^2} = \sqrt{144}$

$t = \pm 12$

11. $3x^2 + 15 = 0$

$3x^2 = -15$

$\sqrt{x^2} = \sqrt{-5}$

$x = \pm \sqrt{-5}$

NO real solution

12. $2x^2 - 8 = 0$

$2x^2 = 8$

$x^2 = 4$

$x = \pm 2$

13. $\sqrt{(x+4)^2} = \sqrt{16}$

$x+4 = \pm 4$
 $-4 \quad -4$

$x = 4 - 4 = 0 = x$
 $x = -4 - 4 = -8 = x$

14. $\frac{2(x-1)^2}{2} = \frac{12}{2}$

$(x-1)^2 = 6$

$x-1 = \pm \sqrt{6}$

$x = 1 + \sqrt{6}$
 $x = 1 - \sqrt{6}$

15. $\frac{-3(x-4)^2}{-3} = \frac{6}{-3}$

$\sqrt{(x-4)^2} = \sqrt{-2}$

$x-4 = \pm \sqrt{-2}$
 $+4 \quad +4$

$x = 4 \pm \sqrt{-2}$

NO real solutions

16. $\frac{-2(x+2)^2}{-2} = \frac{-10}{-2}$

$(x+2)^2 = 5$

$x+2 = \pm \sqrt{5}$
 $-2 \quad -2$

$x = -2 + \sqrt{5}$
 $x = -2 - \sqrt{5}$

17. $(x+7)^2 = 0$

$x+7 = 0$

$x = -7$

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

$\sqrt{(x+4)^2} = \sqrt{-1}$

$x+4 = \pm 1$
 $-4 \quad -4$

$x = 1 - 4 = -3 = x$
 $x = -1 - 4 = -5 = x$