

**Properties of Quadratic Function**

Find the properties of each quadratic function.

1)  $f(x) = x^2 + 2x - 8$

Domain : \_\_\_\_\_

Range : \_\_\_\_\_

x-intercepts : \_\_\_\_\_

y-intercept : \_\_\_\_\_

Vertex : \_\_\_\_\_

Minimum value : \_\_\_\_\_

Axis of symmetry : \_\_\_\_\_

Open up or down : \_\_\_\_\_

2)  $f(x) = -4x^2 + 4x + 15$

Domain : \_\_\_\_\_

Range : \_\_\_\_\_

x-intercepts : \_\_\_\_\_

y-intercept : \_\_\_\_\_

Vertex : \_\_\_\_\_

Maximum value : \_\_\_\_\_

Axis of symmetry : \_\_\_\_\_

Open up or down : \_\_\_\_\_

3)  $f(x) = -2x^2 - 3x$

Domain : \_\_\_\_\_

Range : \_\_\_\_\_

x-intercepts : \_\_\_\_\_

y-intercept : \_\_\_\_\_

Vertex : \_\_\_\_\_

Maximum value : \_\_\_\_\_

Axis of symmetry : \_\_\_\_\_

Open up or down : \_\_\_\_\_

$f(x) = 2x + 6$

Domain : \_\_\_\_\_

Range : \_\_\_\_\_

x-intercepts : \_\_\_\_\_

y-intercept : \_\_\_\_\_

Vertex : \_\_\_\_\_

Minimum value : \_\_\_\_\_

Axis of symmetry : \_\_\_\_\_

Open up or down : \_\_\_\_\_

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## Properties of Quadratic Function

Find the properties of each quadratic function.

1)  $f(x) = x^2 + 2x - 8$

Domain : Real NumbersRange : {y is real :  $y \geq -9$ }x-intercepts :  $(-4, 0)$  and  $(2, 0)$ y-intercept :  $(0, -8)$ Vertex :  $(-1, -9)$ Minimum value :  $-9$ Axis of symmetry :  $x = -1$ Open up or down : Up

2)  $f(x) = -4x^2 + 4x + 15$

Domain : Real NumbersRange : {y is real :  $y \leq 16$ }x-intercepts :  $(-\frac{3}{2}, 0)$  and  $(\frac{5}{2}, 0)$ y-intercept :  $(0, 15)$ Vertex :  $(\frac{1}{2}, 16)$ Maximum value :  $16$ Axis of symmetry :  $x = \frac{1}{2}$ Open up or down : Down

3)  $f(x) = -2x^2 - 3x$

Domain : Real NumbersRange : {y is real :  $y \geq 0$ }x-intercepts :  $(0, 0)$  and  $(-\frac{3}{2}, 0)$ y-intercept :  $(0, 0)$ Vertex :  $(-\frac{3}{4}, \frac{9}{8})$ Maximum value :  $\frac{9}{8}$ Axis of symmetry :  $x = -\frac{3}{4}$ Open up or down : Down

$g(x) = 2x^2 + 6x + 6$

Domain : Real NumbersRange : {y is real :  $y \geq 0$ }x-intercepts :  $(-1, 0)$  and  $(-1, 0)$ y-intercept :  $(0, 6)$ Vertex :  $(-1, 0)$ Minimum value :  $0$ Axis of symmetry :  $x = -1$ Open up or down : Up

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