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Lesson 5: Be There or Be Square
Ready, Set, Go

Ready

In future lessons, you will work with quadratic equations. A quadratic equation can be expressed in the form $ax^2 + bx + c = 0$ using the properties of algebra and equality. Identify whether or not each equation represents a quadratic equation. Explain how you know it is a quadratic equation.

1. $x^2 + 13x - 4 = 0$

Quadratic or not?

Justification:

2. $3x^2 + x = 3x^2 - 2$

Quadratic or not?

Justification:

3. $x(4x - 5) = 0$

Quadratic or not?

Justification:

4. $(2x - 7) + 6x = 10$

Quadratic or not?

Justification:

5. $2^x + 6 = 0$

Quadratic or not?

Justification:

6. $32 = 4x^2$

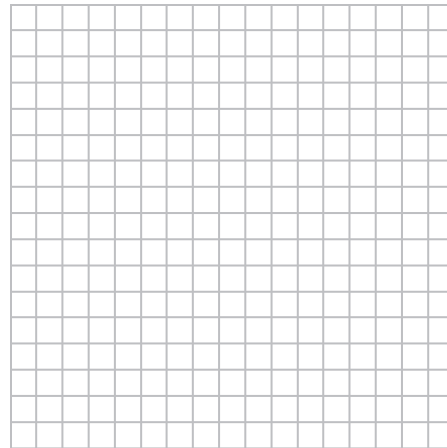NAME								DATE								PERIOD

Quadratic or not?

Justification:

◤ Set

Change the form of each equation to vertex form: $y = a(x - h)^2 + k$. State the vertex, and graph the parabola. Show at least 3 accurate points on each side of the line of symmetry.

7. $y = x^2 - 4x + 1$

Vertex form:
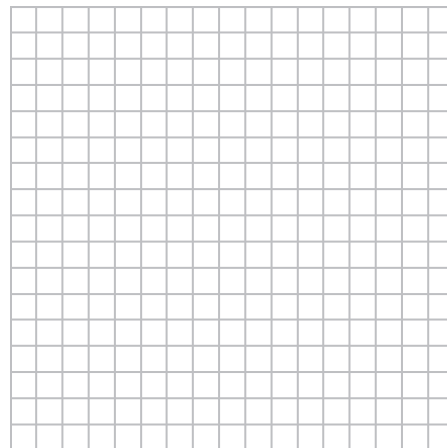
Vertex:

8. $y = x^2 + 2x + 5$

Vertex form:

Vertex:

9. $y = x^2 + 3x + \dfrac{13}{4}$
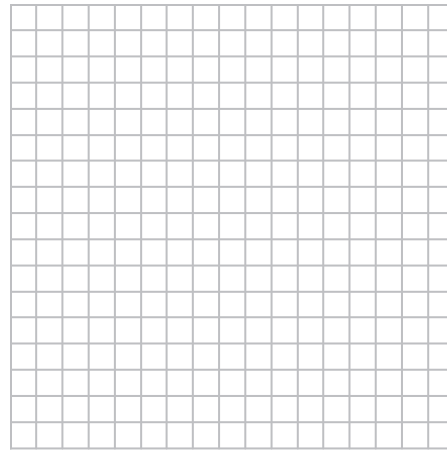
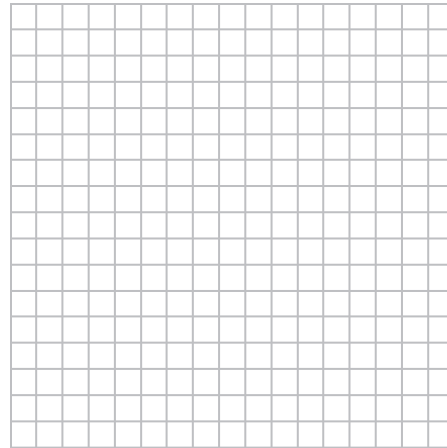NAME   DATE   PERIOD

Vertex form:

Vertex:

10. $y = \dfrac{1}{2}x^2 - x + 5$

Vertex form:

Vertex:

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11. One of the parabolas in problems 7–10 should look wider than the others. Identify the parabola. Explain why this parabola looks different.

Fill in the blank by completing the square. Leave the number that completes the square as a fraction. Then write the trinomial in vertex form.

12. $x^2 - 11x +$ _____ .

Vertex Form:

13. $x^2 + 7x +$ _____ .

Vertex Form:

14. $x^2 + 15x +$ _____ .

Vertex Form:

15. $x^2 + \dfrac{2}{3}x +$ _____ .

Vertex Form:

16. $x^2 - \dfrac{1}{5}x +$ _____ .

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Vertex Form:

17. $x^2 - \dfrac{3}{4}x +$ \line .

Vertex Form:

Go

Identify whether the table represents a linear or quadratic function. If the function is linear, write both the explicit and recursive equations.

18.

x	$f(x)$
1	0
2	3
3	6
4	9
5	12

Type of function:

Equation(s):

19.

x	$f(x)$
1	7
2	10
3	16
4	25
5	37

Type of function:

Equation(s):

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20.

x	$f(x)$
1	8
2	10
3	12
4	14
5	16

Type of function:

Equation(s):

21.

x	$f(x)$
1	28
2	40
3	54
4	70
5	88

Type of function:

Equation(s):