

Math 3 Unit 7 Worksheet 6
Converting Parabolas from General to Descriptive Form

Name: _____
Date: _____ **Per:** _____

For each equation, identify the direction the parabola opens (left, right, up or down); complete the square to write the equation in descriptive form; and indicate the parabola's vertex. Show all work!

1. $y = 2x^2 + 16x + 7$

Direction: _____ Vertex: _____

Equation: _____

2. $x = -5y^2 - 30y + 4$

Direction: _____ Vertex: _____

Equation: _____

3. $y = -\frac{1}{4}x^2 + 2x + 3$

Direction: _____ Vertex: _____

Equation: _____

4. $x = 2y^2 - 12y - 11$

Direction: _____ Vertex: _____

Equation: _____

5. $x = 4y^2 - 4y + \frac{7}{8}$

Direction: _____ Vertex: _____

Equation: _____

6. $y = \frac{1}{2}x^2 + 10x + 2$

Direction: _____ Vertex: _____

Equation: _____

7. $y = -3x^2 + 12x + 13$

Direction: _____ Vertex: _____

Equation: _____

8. $x = -3y^2 + 36y - 1$

Direction: _____ Vertex: _____

Equation: _____

9. $x = \frac{1}{3}y^2 + 8y + 120$

Direction: _____ Vertex: _____

Equation: _____

Vertex answers: Not In Order

(2, 25) (49, -3) (72, -12)

(-4, -25) (4, 7) $(-\frac{1}{8}, \frac{1}{2})$

(107, 6) (-10, -48) (-29, 3)

Selected answers for equations:

2. $x = -5(y + 3)^2 + 49$ opens left

6. $y = \frac{1}{2}(x + 10)^2 - 48$ opens up

8. $x = -3(y - 6)^2 + 107$ opens left