

Homework 5.9 Changing Vertex, Standard Forms

Convert from Standard Form to Vertex Form. Give the vertex and axis of symmetry.

1. $y = x^2 + 16x + 71$

2. $y = -x^2 - 14x - 59$

3. $y = 2x^2 + 36x + 170$

4. $y = x^2 + 4x$

5. $y = x^2 - 12x + 46$

6. $y = x^2 - 6x + 5$

7. $y + 6 = (x + 3)^2$

8. $x^2 - 12x + y + 40 = 0$

Homework 5.9 Changing Forms: Standard↔Vertex (Page 2)

Convert from Vertex Form to Standard Form.

1. $y = (x - 1)^2 + 8$

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

3. $y = -(x - 4)^2 + 3$

4. $y = 2(x + 1)^2 - 2$

5. $y = (x + 3)^2 - 1$

6. $y = (x - 2)^2 - 1$

7. $y = 3(x + 4)^2 + 2$

8. $y = -(x + 1)^2 + 2$

5.9 Answers

Page 1 $\boxed{1}$ $y = (x + 8)^2 + 7$, AOS: $x = -8$, Vertex $(-8, 7)$ $\boxed{2}$ $y = -(x + 7)^2 - 10$, AOS: $x = -7$, Vertex $(-7, -10)$ $\boxed{3}$ $y = 2(x + 9)^2 + 9$, AOS: $x = -9$, Vertex $(-9, 8)$ $\boxed{4}$ $y = (x + 2)^2 - 4$, AOS: $x = -2$, Vertex $(-2, 4)$
 $\boxed{5}$ $y = (x - 6)^2 + 10$, AOS: $x = 6$, Vertex $(6, 10)$ $\boxed{6}$ $y = (x - 3)^2 - 4$, AOS: $x = 3$, Vertex $(3, -4)$
 $\boxed{7}$ $y = (x + 3)^2 - 6$, AOS: $x = -3$, Vertex $(-3, 6)$ $\boxed{8}$ $y = -(x - 6)^2 - 4$, AOS: $x = 6$, Vertex $(6, -4)$

Page 2 $\boxed{1}$ $y = x^2 - 2x + 9$ $\boxed{2}$ $y = 2x^2 + 12x + 13$ $\boxed{3}$ $y = -x^2 + 8x - 13$
 $\boxed{4}$ $y = 2x^2 + 4x$ $\boxed{5}$ $y = x^2 + 6x + 8$ $\boxed{6}$ $y = x^2 - 4x + 3$ $\boxed{7}$ $y = 3x^2 + 24x + 50$ $\boxed{8}$ $y = -x^2 - 2x + 3$