Vertex

Problem 1 of 6

Question

Find the vertex of $4(x - 3)^2 + 3$.

Answer

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

$$y = a(x - h)^2 + k$$

$$a = 4,\ h = 3,\ k = 3$$

$$\text{Vertex} = \boxed{(h, k) = (3, 3)}$$

Problem 2 of 6

Question

Find the vertex of $5(x + 3)^2 - 3$.

Answer

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

$$y = 5[x - (-3)]^2 - 3$$

$$y = a(x - h)^2 + k$$

$$a = 5,\ h = -3,\ k = -3$$

$$\text{Vertex} = \boxed{(h, k) = (-3, -3)}$$

Problem 3 of 6

Question

Find the vertex of $6(x + 1)^2 - 4$.

Answer

$$y = 6(x + 1)^2 - 4$$

$$y = 6[x - (-1)]^2 - 4$$

$$y = a(x - h)^2 + k$$

$$a = 6,\ h = -1,\ k = -4$$

$$\text{Vertex} = \boxed{(h, k) = (-1, -4)}$$

Problem 4 of 6

Question

Find the vertex of $10x^2 + 5$.

Answer

$$y = 10x^2 + 5$$

$$y = 10(x - 0)^2 + 5$$

$$y = a(x - h)^2 + k$$

$$a = 10,\ h = 0,\ k = 5$$

$$\text{Vertex} = \boxed{(h, k) = (0, 5)}$$

Problem 5 of 6

Question

Find the parabola of vertex (10,5) and leading coefficient 1 in the standard form.

Answer

$a = 1, (h, k) = (10, 5)$

$y = a(x - h)^2 + k$

$y = 1(x - 10)^2 + 5$

$\boxed{y = (x - 10)^2 + 5}$

Problem 6 of 6

Question

Find the parabola of vertex (1, 1) and leading coefficient 5 in the standard form.

Answer

$a = 5, (h, k) = (1, 1)$

$y = a(x - h)^2 + k$

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

$$\boxed{y = 5(x - 1)^2 + 1}$$