

10.1 EXERCISES

HOMEWORK KEY

 = **WORKED-OUT SOLUTIONS**
on p. WS1 for Exs. 7 and 41

 = **TAKS PRACTICE AND REASONING**
Exs. 22, 33, 43, 44, and 46

SKILL PRACTICE

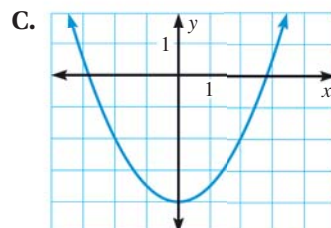
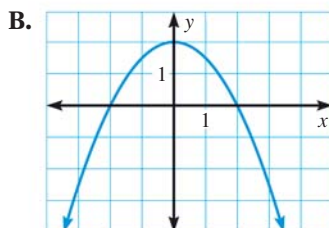
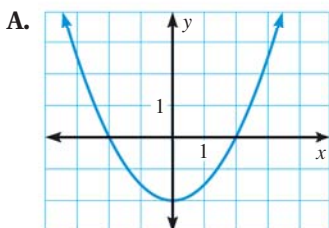
- VOCABULARY** Copy and complete: Every quadratic function has a U-shaped graph called a(n) ? .
- WRITING** Explain how you can tell whether the graph of a quadratic function opens up or down.

MATCHING Match the quadratic function with its graph.

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

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

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



EXAMPLES 1, 2, and 3

on pp. 628–629
for Exs. 6–23

GRAPHING QUADRATIC FUNCTIONS Graph the function. Compare the graph with the graph of $y = x^2$.

6. $y = 8x^2$

7. $y = -2x^2$

8. $y = -3x^2$

9. $y = 5x^2$

10. $y = \frac{11}{2}x^2$

11. $y = \frac{2}{3}x^2$

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

13. $y = -\frac{1}{9}x^2$

14. $y = \frac{3}{8}x^2$

15. $y = -\frac{1}{5}x^2$

16. $y = x^2 - 7$

17. $y = x^2 + 9$

18. $y = x^2 + 6$

19. $y = x^2 - 4$

20. $y = x^2 - 1$

21. $y = x^2 + \frac{7}{4}$

22.  **TAKS REASONING** What is the vertex of the graph of the function

$$y = -\frac{3}{4}x^2 + 7?$$

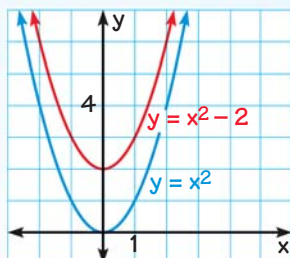
(A) $(-7, 0)$

(B) $(0, -7)$

(C) $(0, 7)$

(D) $(7, 0)$

23. **ERROR ANALYSIS** Describe and correct the error in drawing and comparing the graphs of $y = x^2$ and $y = x^2 - 2$.



Both graphs open up and have the same axis of symmetry. However, the vertex of the graph of $y = x^2 - 2$, $(0, 2)$, is 2 units above the vertex of the graph of $y = x^2$, $(0, 0)$.

