

# ANSWER PRESENTATION TOOL

Algebra 1 - Student Edit

8

1 - Exercises

3-5, 7, 12-14

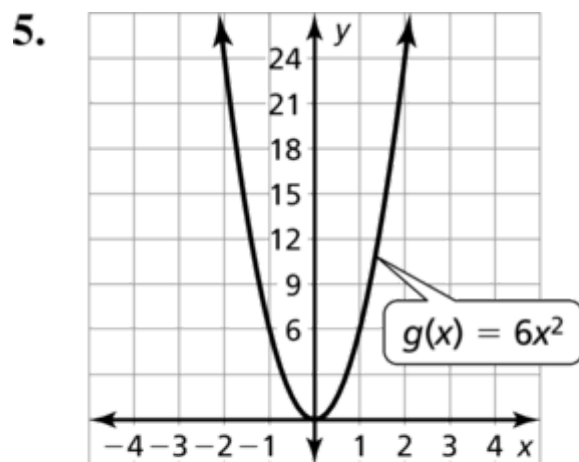
ALL EVEN

Show Solutions

ODD

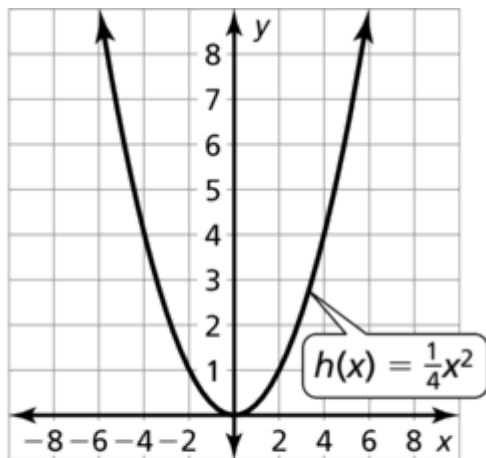
3. The vertex is  $(1, -1)$ . The axis of symmetry is  $x = 1$ . The domain is all real numbers. The range is  $y \geq -1$ . When  $x < 1$ ,  $y$  increases as  $x$  increases. When  $x > 1$ ,  $y$  increases as  $x$  decreases.

4. The vertex is  $(-2, 4)$ . The axis of symmetry is  $x = -2$ . The domain is all real numbers. The range is  $y \geq 4$ . When  $x < -2$ ,  $y$  increases as  $x$  decreases. When  $x > -2$ ,  $y$  increases as  $x$  increases.



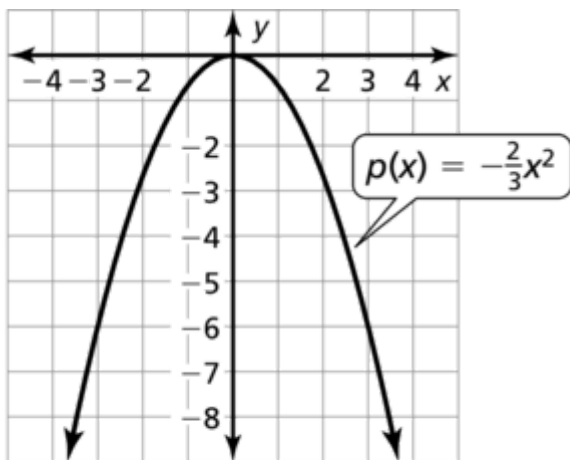
The graph of  $g$  is a vertical stretch by a factor of 6 of the graph of  $f$ .

7.



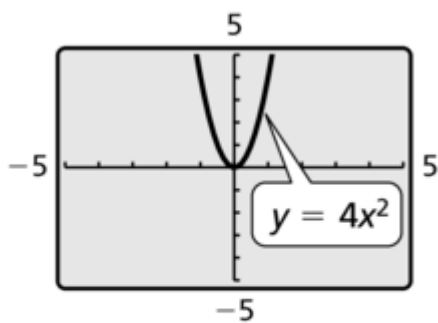
The graph of  $h$  is a vertical shrink by a factor of  $\frac{1}{4}$  of the graph of  $f$ .

12.



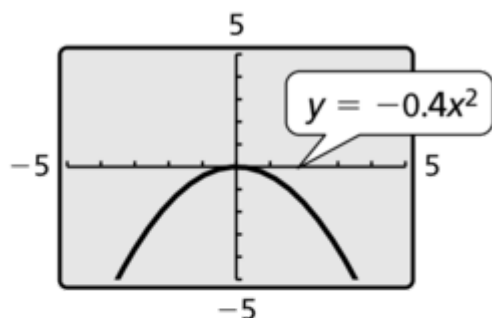
The graph of  $p$  is a vertical shrink by a factor of  $\frac{2}{3}$  and a reflection in the  $x$ -axis of the graph of  $f$ .

13.



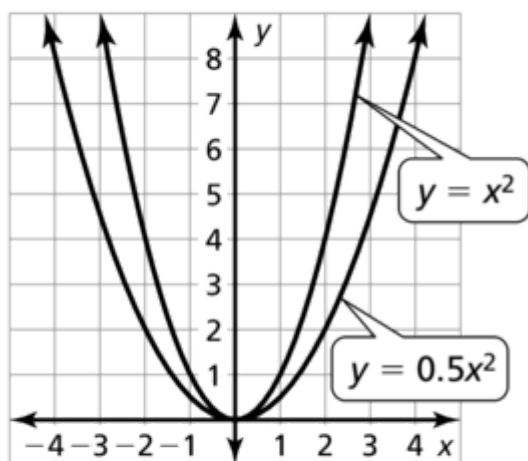
The graph of  $y = 4x^2$  is a reflection in the  $x$ -axis of the graph of  $y = -4x^2$ .

14.



The graph of  $y = -0.4x^2$  is a vertical shrink by a factor of  $\frac{1}{10}$  of the graph of  $y = -4x^2$ .

17. The graph of  $y = 0.5x^2$  should be wider than the graph of  $y = x^2$ ;



The graphs have the same vertex and the same axis of symmetry. The graph of  $y = 0.5x^2$  is wider than the graph of  $y = x^2$ .

18. 300 feet high, 1000 feet wide

21.  $f$  is increasing when  $x > 0$ .  $g$  is increasing when  $x < 0$ .

22.  $f$  is decreasing when  $x < 0$ .  $g$  is decreasing when  $x > 0$ .

**25.** *Sample answer:* The vertex of a parabola that opens up is the minimum point, so its  $y$ -coordinate is the minimum value of  $y$ . The graph passes through  $(6, -3)$ , so 2 is not the minimum value of  $y$ .

**31. a.** 8 cm

**b.** no; *Sample answer:* A faster rotational speed would increase the depth. The diagram shown has a depth of 3.2 centimeters. A model of  $y = 0.1x^2$  would only have a depth of 1.6 centimeters, so it would have a slower rotational speed.