

ANSWER PRESENTATION TOOL

Algebra 2 - Student Edit

4

7 - Practice

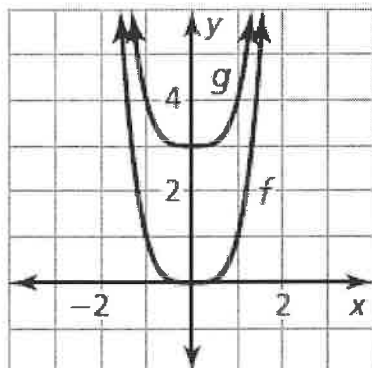
1-25

ALL EVEN

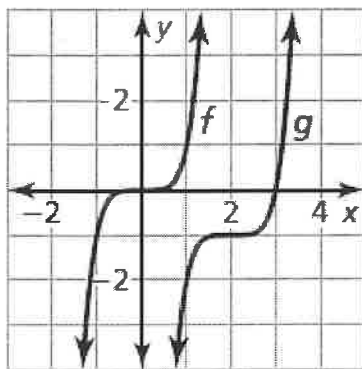
Show Solu

ODD

1. Notice that the function is of the form $g(x) = (x - h)^4 + k$.
 Rewrite the function to identify h and k , $g(x) = (x - 0)^4 + 3$.
 Because $h = 0$ and $k = 3$, the graph of g is a translation
 3 units up of the graph of f .



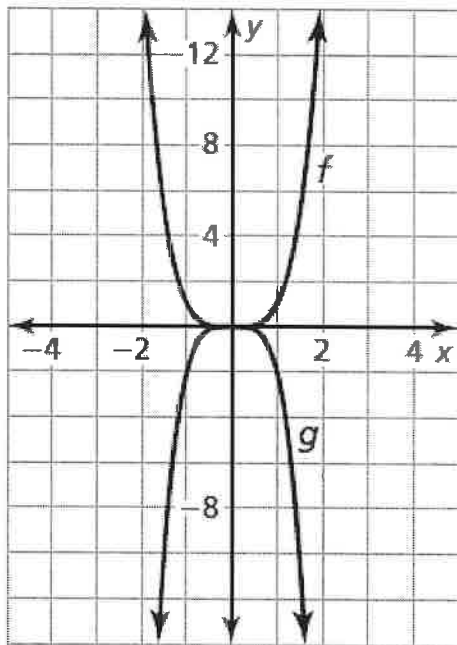
3. Notice that the function is of the form $g(x) = (x - h)^5 + k$.
 Rewrite the function to identify h and k ,
 $g(x) = (x - 2)^5 + (-1)$. Because $h = 2$ and $k = -1$, the
 graph of g is a translation 2 units right and 1 unit down of the
 graph of f .



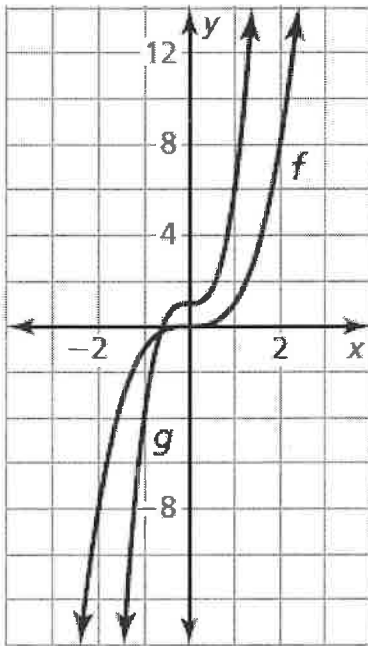
5. B; The graph of f is translated 2 units right.

7. D; The graph of f is translated 2 units right and 2 units up.

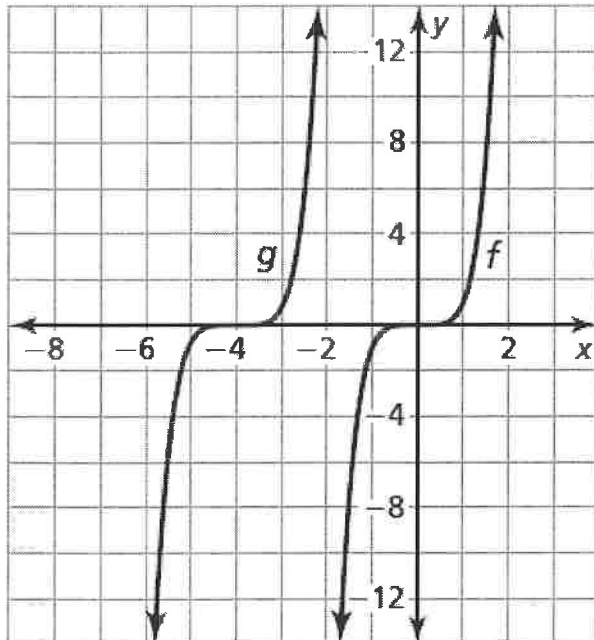
9. Notice that the function is of the form $g(x) = ax^4$, where $a = -2$. So, the graph of g is a vertical stretch by factor of 2 followed by a reflection in the x -axis of the graph of f .



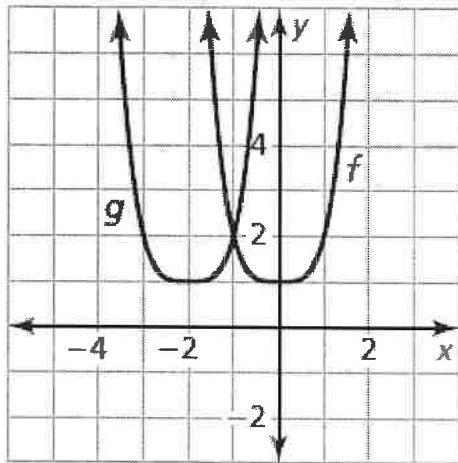
11. Notice that the function is of the form $g(x) = ax^3 + k$, where $a = 5$ and $k = 1$. So, the graph of g is a vertical stretch by factor of 5 followed by a translation 1 unit up of the graph of f .



13. Notice that the function is of the form $g(x) = a(x - h)^5$, where $a = \frac{3}{4}$ and $h = -4$. So, the graph of g is a vertical shrink by factor of $\frac{3}{4}$ followed by a translation 4 units left of the graph of f .

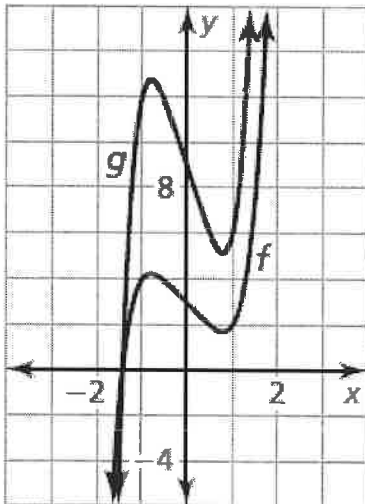


$$\begin{aligned}
 15. \quad g(x) &= f(x + 2) \\
 &= (x + 2)^4 + 1 \\
 &= x^4 + 8x^3 + 24x^2 + 32x + 16 + 1 \\
 &= x^4 + 8x^3 + 24x^2 + 32x + 17
 \end{aligned}$$



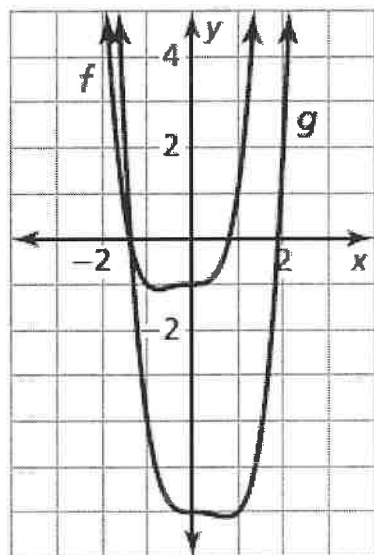
The graph of g is a translation 2 units left of the graph of f .

$$\begin{aligned}
 17. \quad g(x) &= 3f(x) \\
 &= 3(x^5 - 2x + 3) \\
 &= 3x^5 - 6x + 9
 \end{aligned}$$



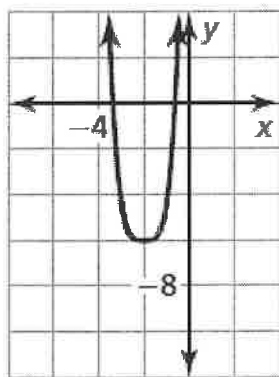
The graph of g is a vertical stretch by a factor of 3 of the graph of f .

$$\begin{aligned}
 19. \quad g(x) &= f(-x) - 5 \\
 &= ((-x)^4 + (-x)^3 - 1) - 5 \\
 &= x^4 - x^3 - 6
 \end{aligned}$$



The graph of g is a reflection in the y -axis followed by a translation 5 units down of the graph of f .

21. The graph has been translated horizontally to the right 2 units instead of to the left 2 units.



23. Step 1 First write a function h that represents the translation of f .

$$\begin{aligned}h(x) &= f(x - (-3)) \\ &= f(x + 3) \\ &= (x + 3)^3 - 6 \\ &= x^3 + 9x^2 + 27x + 27 - 6 \\ &= x^3 + 9x^2 + 27x + 21\end{aligned}$$

Step 2 Then write a function g that represents the reflection of h .

$$\begin{aligned}g(x) &= h(-x) \\ &= (-x)^3 + 9(-x)^2 + 27(-x) + 21 \\ &= -x^3 + 9x^2 - 27x + 21\end{aligned}$$

The transformed function is $g(x) = -x^3 + 9x^2 - 27x + 21$.

25. Step 1 First write a function h that represents the horizontal shrink and translation of f .

$$\begin{aligned}h(x) &= f(3x) + 2 \\ &= (3x)^3 + 2(3x)^2 - 9 + 2 \\ &= 27x^3 + 18x^2 - 7\end{aligned}$$

Step 2 Then write a function g that represents the reflection of h .

$$\begin{aligned}g(x) &= -h(x) \\ &= -(27x^3 + 18x^2 - 7) \\ &= -27x^3 - 18x^2 + 7\end{aligned}$$

The transformed function is $g(x) = -27x^3 - 18x^2 + 7$.