ANSWER PRESENTATION TOOL

Algebra 2 - Student Edit 1 2 - Practice 1-9,15,27,3: ALL EVEN Show Soli

ODD

1. A translation 4 units left is a horizontal translation that subtracts -4 from each input value.

$$\begin{aligned} g(x) &= f(x + 4) \\ &= (x + 4) - 5 \\ &= x - 1 \end{aligned}$$

The transformed function is $g(x) = x - 1$.

3. A translation 2 units down is a vertical translation that adds -2 to each output value.

$$\begin{aligned} g(x) &= f(x) - 2 \\ &= \big(|4x + 3| + 2\big) - 2 \\ &= |4x + 3| \end{aligned}$$

The transformed function is $g(x) = |4x + 3|$.

5. A translation 3 units right is a horizontal translation that subtracts 3 from each input value.

$$\begin{aligned} g(x) &= f(x - 3) \\ &= 4 - |(x - 3) + 1| \\ &= 4 - |x - 2| \end{aligned}$$

The transformed function is $g(x) = 4 - |x - 2|$.

7. A horizontal translation 3 units right or a vertical translation 3 units up will produce the function g from the function f.

9. A reflection in the x-axis changes the sign of each output value.

$$\begin{aligned} g(x) &= -f(x) \\ &= -(-5x + 2) \\ &= 5x - 2 \end{aligned}$$

The transformed function is $g(x) = 5x - 2$.

15. A vertical stretch by a factor of 5 multiplies each output value by 5.

$$\begin{aligned} g(x) &= 5f(x) \\ &= 5(x + 2) \\ &= 5x + 10 \end{aligned}$$

The transformed function is $g(x) = 5x + 10$.

27. A vertical stretch by a factor of 2 multiplies each output value by 2 and a translation 1 unit is a vertical translation that adds 1 to each output value.

$$\begin{aligned} g(x) &= 2f(x) + 1 \\ &= 2(x) + 1 \\ &= 2x + 1 \end{aligned}$$

The transformed function is $g(x) = 2x + 1$.

33. The error is that 3 was added rather than subtracted to represent the translation 3 units right. The correct function is $g(x) = |x - 3| + 2$.