

ANSWER PRESENTATION TOOL

Algebra 2 - Student Edit

1

2 - Practice

2-10,28,34

ALL EVEN

Show Solu

ODD

2. A translation 2 units right is a horizontal translation that subtracts 2 from each input value.

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

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

4. A translation 6 units up is a vertical translation that adds 6 to each output value.

$$\begin{aligned}g(x) &= f(x) + 6 \\ &= (2|x| - 9) + 6 \\ &= 2|x| - 3\end{aligned}$$

The transformed function is $g(x) = 2|x| - 3$.

6. A translation 1 unit up is a vertical translation that adds 1 to each output value.

$$\begin{aligned}g(x) &= f(x) + 1 \\ &= (|4x| + 5) + 1 \\ &= |4x| + 6\end{aligned}$$

The transformed function is $g(x) = |4x| + 6$.

8. The transformation needed to model the situation using the function f is a vertical translation. The new model for the net income is $g(x) = 4000x - 12,000$. To find how many weeks it will take to pay off the extra expenses, set g equal to 0 and solve for x .

$$4000x - 12,000 = 0$$

$$4000x = 12,000$$

$$x = 3$$

It will take 3 weeks to pay off the extra expenses.

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

$$g(x) = -f(x)$$

$$= -\left(\frac{1}{2}x - 3\right)$$

$$= -\frac{1}{2}x + 3$$

The transformed function is $g(x) = -\frac{1}{2}x + 3$.

28. A translation 3 units down is a vertical translation that adds -3 to each output value and a vertical shrink by a factor of $\frac{1}{3}$ multiplies each output value by $\frac{1}{3}$.

$$g(x) = \frac{1}{3}(f(x) - 3)$$

$$= \frac{1}{3}(x - 3)$$

$$= \frac{1}{3}x - 1$$

The transformed function is $g(x) = \frac{1}{3}x - 1$.

34. A vertical stretch is given by $y = af(x)$, not $y = f(ax)$.

The correct expression for the function is

$$g(x) = 5(x - 6) = 5x - 30.$$