

ANSWER PRESENTATION TOOL

Algebra 2 - Student Edit

1

Chapter Rev

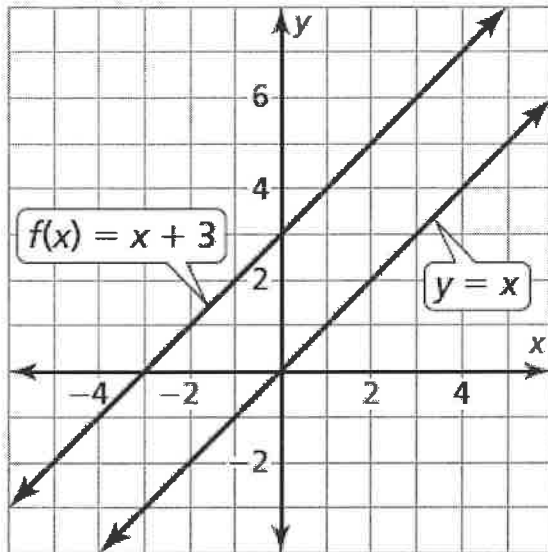
2-26

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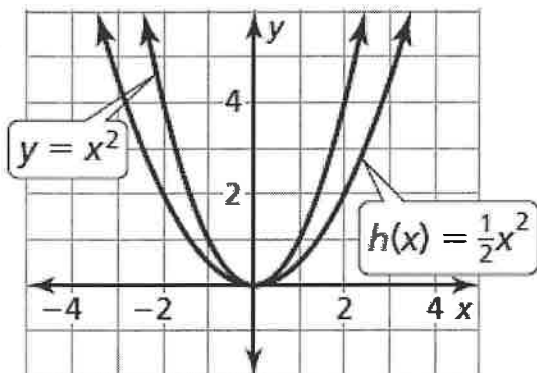
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2.

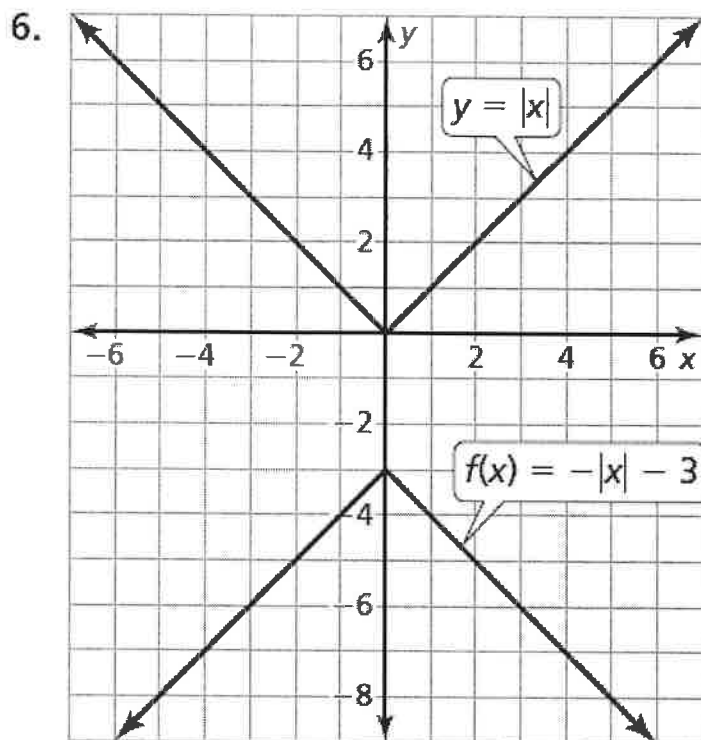


The graph of f is a translation 3 units up of the parent linear function.

4.



The graph of h is a vertical shrink by a factor of $\frac{1}{2}$ of the parent quadratic function.

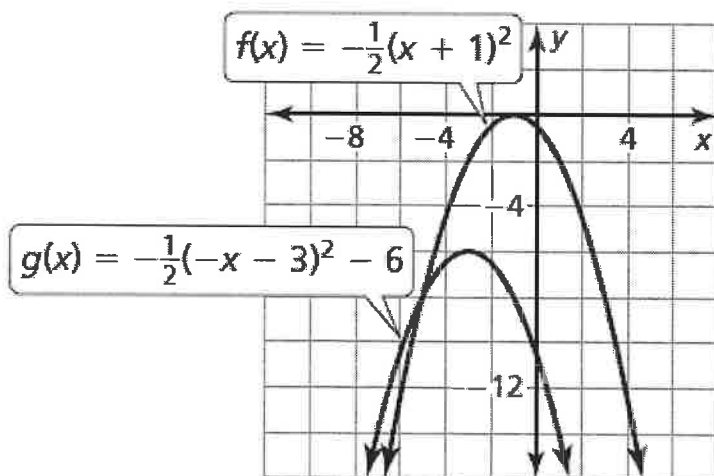


The graph of f is a reflection in the x -axis and a translation 3 units down of the parent absolute value function.

8.
$$g(x) = f(-x - 4) - 6$$

$$= -\frac{1}{2}((-x - 4) + 1)^2 - 6$$

$$= -\frac{1}{2}(-x - 3)^2 - 6$$



10. The graph of g is a reflection in the x -axis, a vertical translation 4 units down and a horizontal translation 1 unit left of the graph of f .

- 12.** A horizontal shrink by a factor of $\frac{1}{3}$ multiplies each input value by 3.

$$\begin{aligned}g(x) &= f(3x) \\ &= 3x\end{aligned}$$

- 14.** A reflection in the y-axis changes the sign of each input value and a translation 3 units down is a vertical translation and adds -3 to the output value.

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

16.

$$\begin{aligned}g(x) &= \frac{1}{2}f(x) - 20 \\ &= \frac{1}{2}(20x + 80) - 20 \\ &= 10x + 40 - 20 \\ &= 10x + 20\end{aligned}$$

So, $g(x) = 10x + 20$

$$g(3) = 10(3) + 20 = 30 + 20 = 50$$

A senior citizen pays \$50 to go camping for three days in the park.

$$18. m = \frac{200 - 540}{25 - 8} = \frac{-340}{17} = -20$$

$$y - 200 = -20(x - 25)$$

$$y - 200 = -20x + 500$$

$$y = -20x + 700$$

So, an equation of the line is $y = -20x + 700$. The height of the hot air balloon is decreasing at the rate of 20 meters per minute.

20. According to a scatter plot, the data show a linear relationship.

Use the points (62, 105) and (70, 117) to find the line of fit.

$$m = \frac{117 - 105}{70 - 62} = \frac{12}{8} = \frac{3}{2}$$

$$y - 105 = \frac{3}{2}(x - 62)$$

$$y - 105 = \frac{3}{2}x - 93$$

$$y = \frac{3}{2}x + 12$$

So, an equation of the line of fit is $y = \frac{3}{2}x + 12$.

$$y = \frac{3}{2}(60) + 12 = 90 + 12 = 102$$

When the temperature is 60°F, there are about 102 ice cream cones sold.

22. Step 1 Rewrite the system as a linear system in two variables by substituting for x from Equation 3 into Equations 1 and 2.

$$x + y + z = 3$$

$$4z + y + z = 3$$

$$y + 5z = 3$$

$$-x + 3y + 2z = -8$$

$$-4z + 3y + 2z = -8$$

$$3y - 2z = -8$$

Step 2 Solve the new linear system for both of its variables.

$$3y + 15z = 9$$

$$\underline{-3y + 2z = 8}$$

$$17z = 17$$

$$z = 1$$

$$y + 5(1) = 3$$

$$y = -2$$

Step 3 Substitute $y = -2$ and $z = 1$ into an original equation and solve for x .

$$x + y + z = 3$$

$$x - 2 + 1 = 3$$

$$x = 4$$

The solution is $(4, -2, 1)$.

24. Step 1 Rewrite the system as a linear system in two variables.

$$-x - y - z = -2$$

$$2x - 3y + z = 11$$

$$\underline{x - 4y = 9}$$

$$4x - 6y + 2z = 22$$

$$\underline{-3x + 2y - 2z = -13}$$

$$x - 4y = 9$$

Step 2 Solve the new linear system for both of its variables.

$$x - 4y = 9$$

$$\underline{-x + 4y = -9}$$

$$0 = 0$$

Because you obtain the identity $0 = 0$, the system has infinite solutions.

Step 3 Solve the equation from Step 1 for x to obtain $x = 9 + 4y$. Then, substitute $9 + 4y$ for x in original Equation 1 to obtain $z = -7 - 5y$. A solution of the system can be represented by any ordered triple of the form $(9 + 4y, y, -7 - 5y)$.

26. Step 1 Rewrite the system as a linear system in two variables.

$$5x - 5y + 15z = 30$$

$$\underline{-6x + 6y - 15z = -27}$$

$$-x + y = 3$$

Step 2 Solve the new linear system for both of its variables.

$$-x + y = 3$$

$$\underline{x - 2y = 5}$$

$$-y = 8$$

$$y = -8$$

$$x - 2(-8) = 5$$

$$x = -11$$

Step 3 Substitute $x = -11$ and $y = -8$ into an original equation and solve for z .

$$x - y + 3z = 6$$

$$-11 + 8 + 3z = 6$$

$$3z = 9$$

$$z = 3$$

The solution is $(-11, -8, 3)$.

