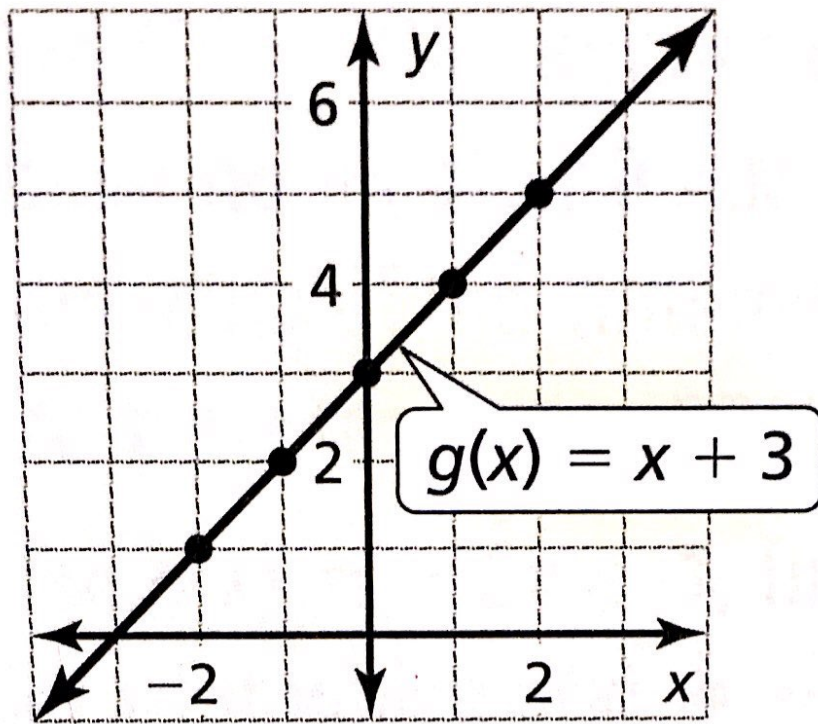


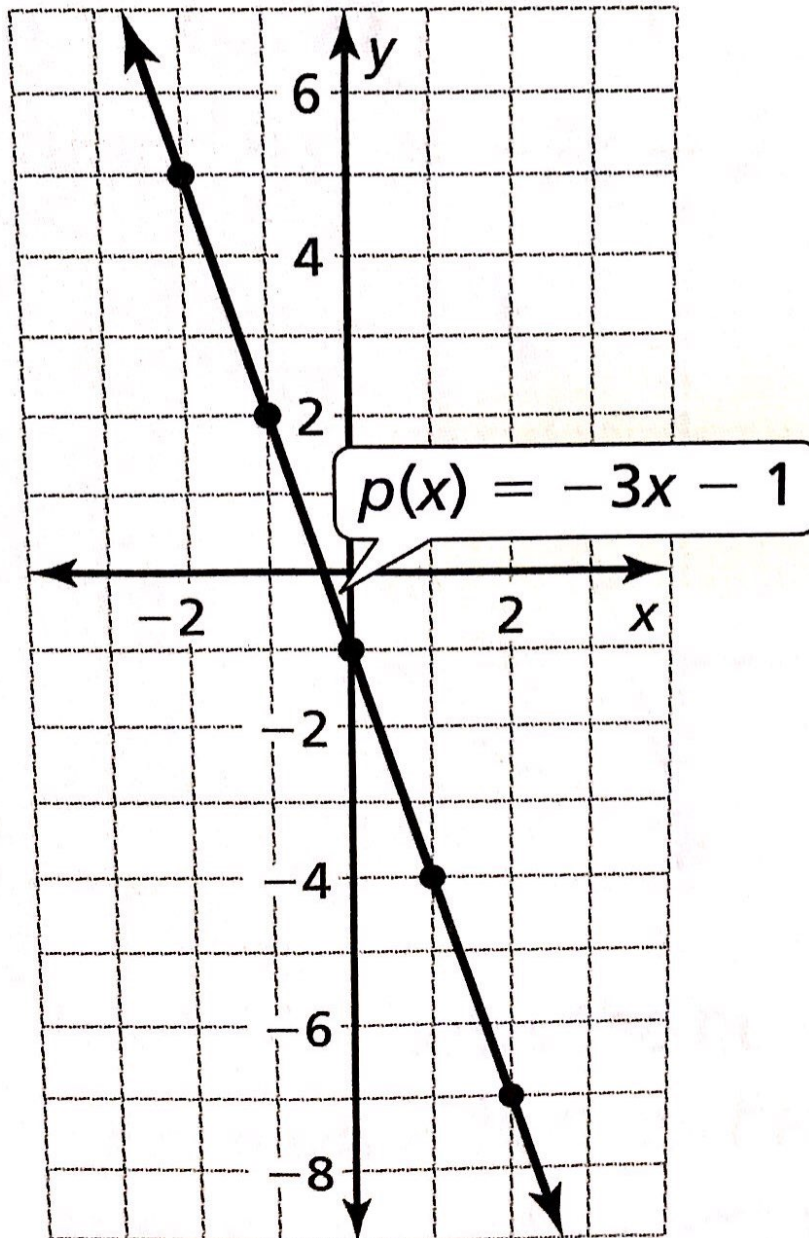
ANSWERS

1. function; Each input has exactly one output.
2. not a function; The input -10 has two outputs, 2 and 6 , and the input -8 has two outputs, 3 and 8 .
3. domain: $0, 1, 2, 3, 4$;
range: $-5, -3, -1, 1$
4. domain: all real numbers; range:
 $y \leq 3$
5. domain: $-3 \leq x \leq 3$;
range: $-1 \leq y \leq 3$
6. linear; The graph is a line.
7. nonlinear; As x increases by 5 ,
 y increases by different amounts.
The rate of change is not constant.
8. nonlinear; It cannot be written in the
form $y = mx + b$.
9. continuous; The depth can be any
number of feet.
10. discrete; The number of hats must
be a whole number.
11. $x = 5$

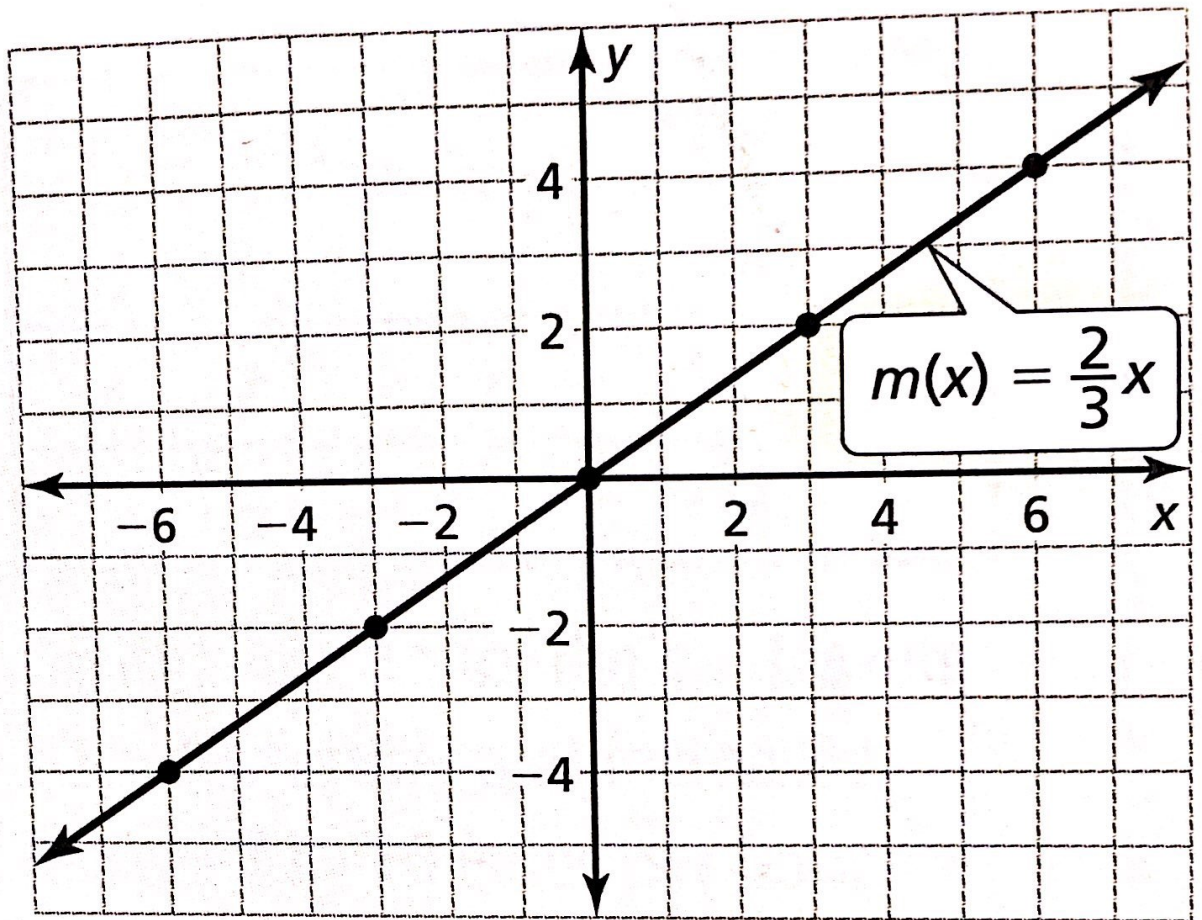
12.



13.

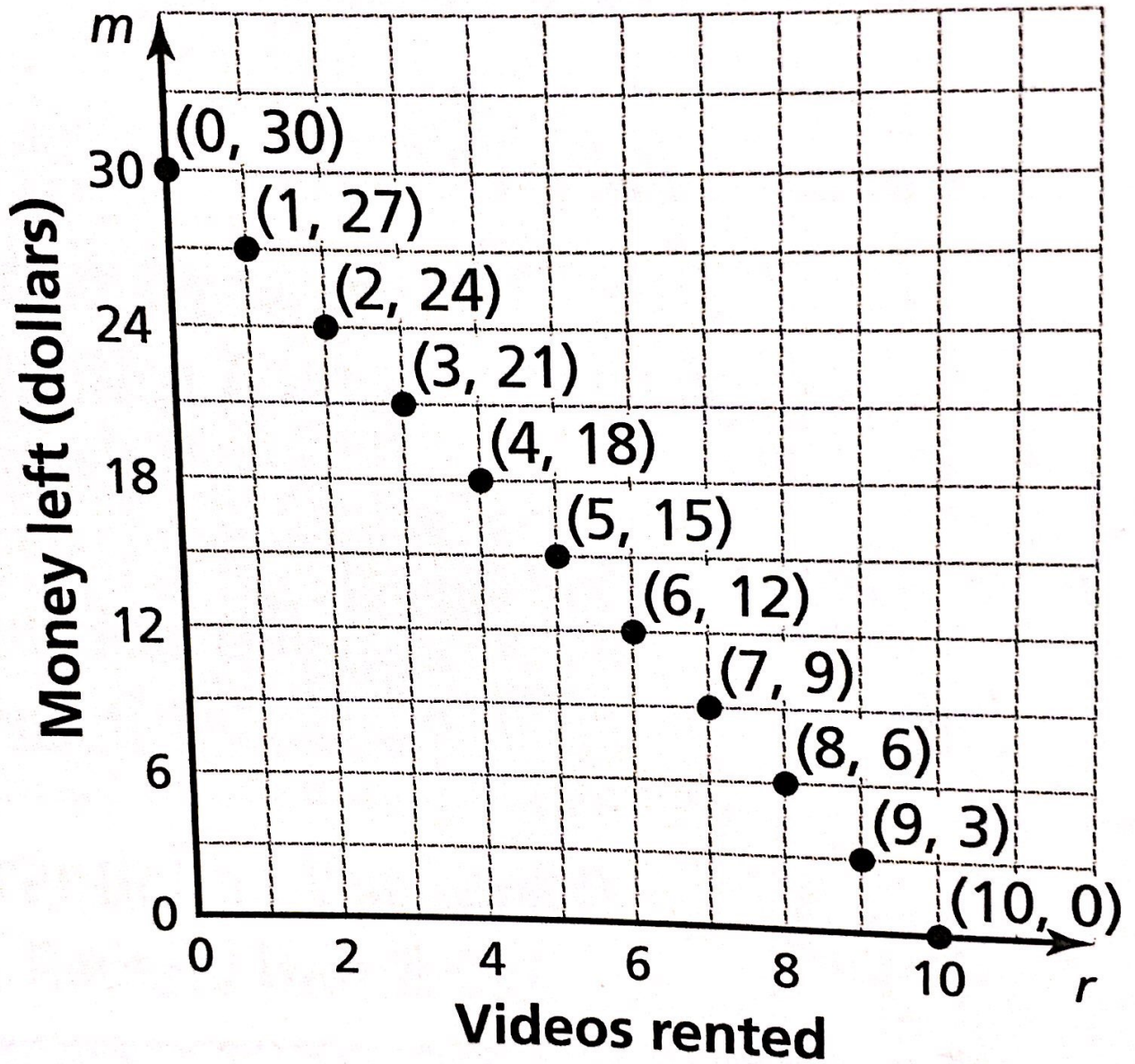


14.



15. a. m is the dependent variable and r is the independent variable.
- b. 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10;
discrete; The number of video games rented must be a whole number.

c.



d. 0, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30

this is important
↓

16 a) $d(x) = 1375 - 110x$

$d(x)$ is the distance from the destination

$$\begin{aligned}d(8) &= 1375 - 110(8) \\ &= 1375 - 880 \\ &= 495\end{aligned}$$

x is the number of hours travelled

After 8 hours, the train is 495 miles from its destination.

THINK!

b) When the train reaches its destination it will be 0 miles from its destination.

This means that $d(x) = 0$.

So we need to substitute 0 for $d(x)$ in the equation.

$$d(x) = 1375 - 110x$$

$$0 = 1375 - 110x$$

$$\underline{-1375} \quad \underline{-1375}$$

$$\underline{-1375} = \underline{-110x}$$
$$\underline{-110} \quad \underline{-110}$$

$$12.5 = x$$

The train will travel 12.5 hours before reaching its destination.