What is the rate of change of the function with a graph passing through the points (-1, 7) and (3, 19)?

\[
\frac{19-7}{3-(-1)} = \frac{12}{4}
\]

Fernando has a water tank that holds 160 gallons. There are 40 gallons of water in the tank. Fernando opens a tap to fill the tank, and the tap fills 7 gallons of water into the tank every 10 minutes.

Which function shows the relationship between the total amount of water, \( A \), in the tank \( t \) minutes after the tap is opened and until the tank is completely filled?

- \( A = 40t + \frac{7}{10} \)
- \( A = 40 + \frac{7}{10}t \)
- \( A = 40t + \frac{10}{7} \)
- \( A = 40 + \frac{10}{7}t \)
Reflection
"Flip"

**Definition:** A transformation of a figure that flips the figure across a line to create a mirror image.

**Reflect Across the x axis**
**Rule:** Change the y value to its opposite

\[(x, y) \rightarrow (x, -y)\]

<table>
<thead>
<tr>
<th>A (0,3)</th>
<th>A' (0, -3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B (3,6)</td>
<td>B' (3, -6)</td>
</tr>
<tr>
<td>C (6,3)</td>
<td>C' (6, -3)</td>
</tr>
<tr>
<td>D (3,0)</td>
<td>D' (3, 0)</td>
</tr>
</tbody>
</table>

**Reflect Across the y axis**
**Rule:** Change the x value to its opposite

\[(x, y) \rightarrow (-x, y)\]

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<td>D (3,0)</td>
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</tr>
</tbody>
</table>
1) Reflection: Across the y-axis
A: (0, 2)
B: (4, 4)
C: (3, 0)

2) Reflection: Across the x-axis
A: (-5, 4)
B: (-1, 4)
C: (-4, 1)
D: (-4, 1)
luation is a transformation that produces an image with the same shape as the original, but is a different size.

ilation that creates a larger image is called an expansion.
ilation that creates a smaller image is called a contraction.
ilation stretches or shrinks the original figure.
Starting with \( \triangle ABC \), draw the dilation image of the triangle with a center at the origin and a scale factor of two.

Notice that every coordinate of the original triangle has been multiplied by the scale factor \((x, y) \rightarrow (2x, 2y)\).
Starting with quadrilateral $ABCD$ (blue), draw the dilation image of the quadrilateral with a center at the origin and a scale factor of $\frac{1}{2}$.

Each vertex of $ABCD$ is multiplied by $\frac{1}{2}$.

Dilation with scale factor $\frac{1}{2}$, multiply by $\frac{1}{2}$. 
$(x, y) \rightarrow (\frac{1}{2}x, \frac{1}{2}y)$
Scale factor = 2

Points:
- P (-4, -2)
- S (-1, 1)
- R (4, 1)
- Q (1, -2)

Labels:
- P (-8, -4)
- S (-2, 2)
- R (8, 2)
- Q (2, -4)
cale factor = 0.5