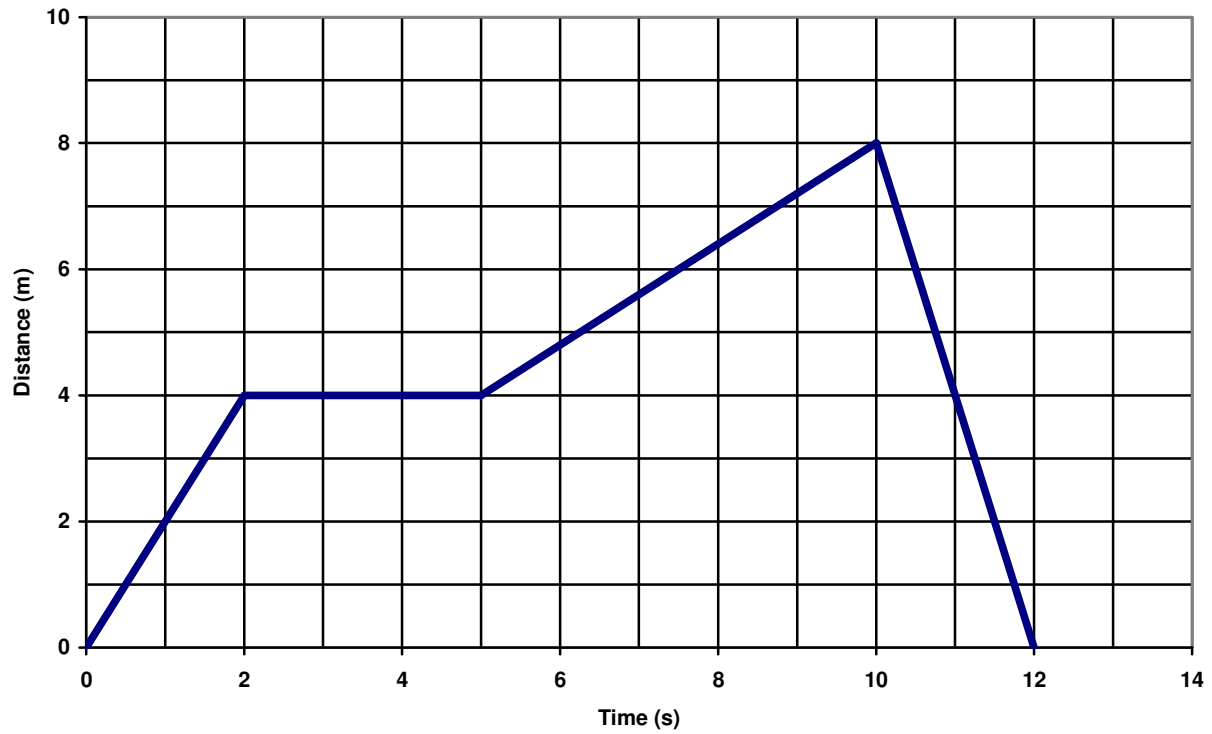


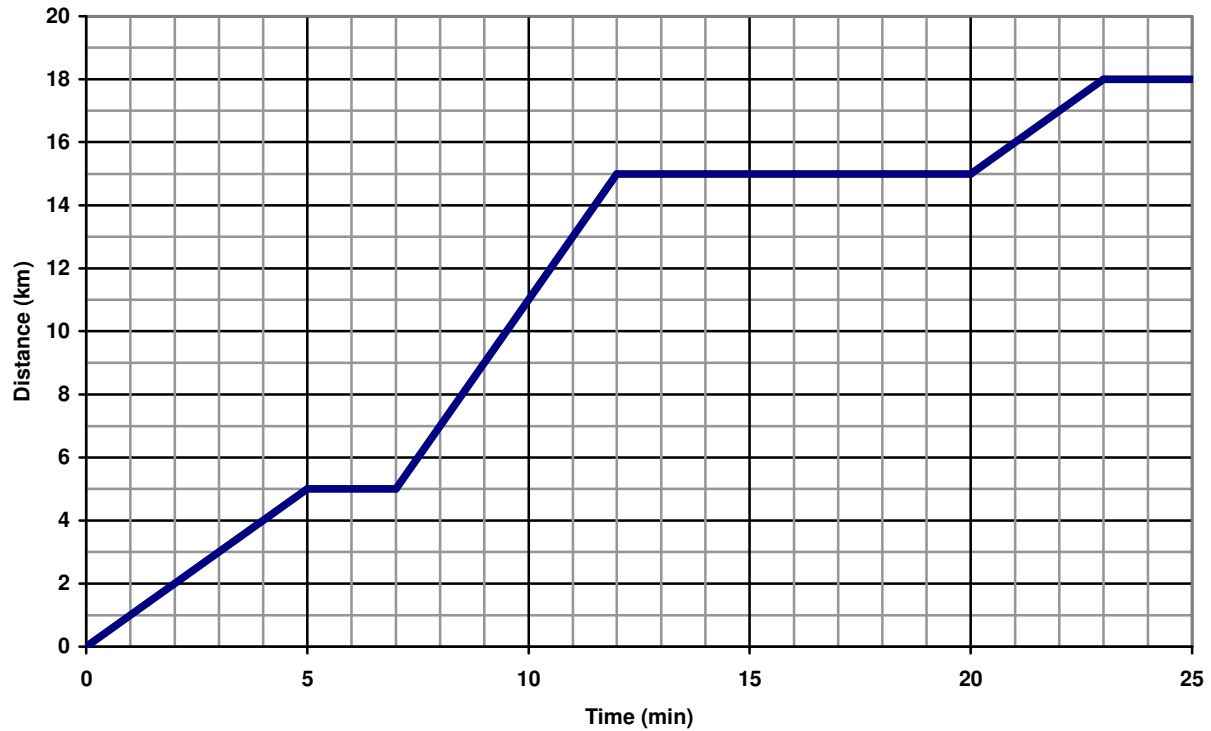
Rate of Change

Rate of Change = _____

For the following graph, calculate the rate of change of each section.



2 The following graph describes Marissa's drive to work.



- How long did she stop for during her trip?
- Give one reason why she might have stopped.
- After 10 minutes, what distance is she from her house?
- At what time is she 7 km from her house?

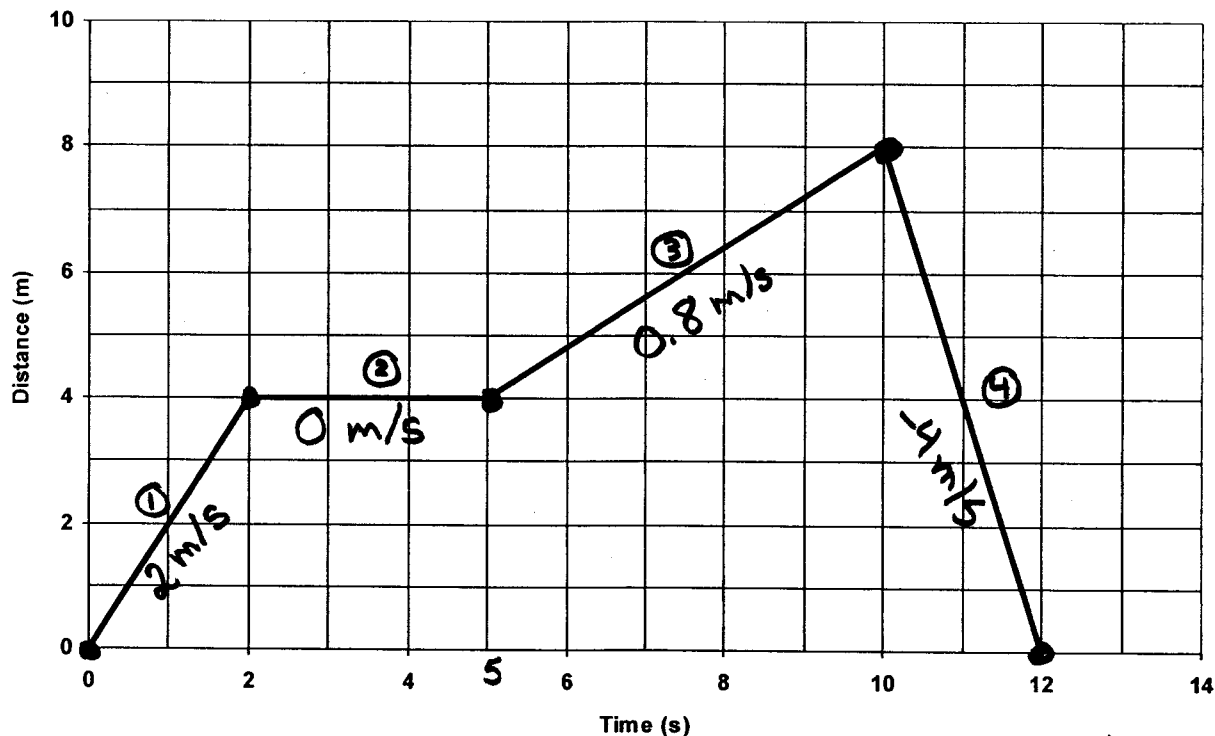
e) Calculate the rate of change in each section of the graph.

f) Describe her drive to work.

Rate of Change

$$\text{Rate of Change} = \frac{\text{Speed} = \frac{\text{Distance}}{\text{Time}}}$$

For each of the following graphs, calculate the rate of change for each section of the graph. (speed)



$$\begin{array}{l} \textcircled{1} \begin{array}{c|c} \text{Time} & \text{Distance} \\ \hline 0 & 0 \\ 2 & 4 \end{array} +2s \quad \textcircled{2} \begin{array}{c|c} T & D \\ \hline 2 & 4 \\ 5 & 4 \end{array} +3 \quad \textcircled{3} \begin{array}{c|c} T & D \\ \hline 5 & 4 \\ 10 & 8 \end{array} +5 \quad \textcircled{4} \begin{array}{c|c} T & D \\ \hline 10 & 8 \\ 12 & 0 \end{array} +2 \end{array}$$

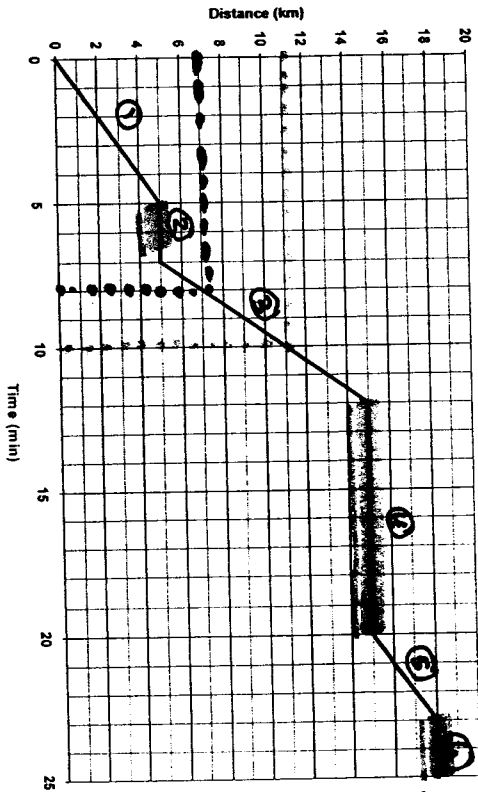
$$\begin{aligned} \text{Speed} &= \frac{\text{Dist}}{\text{Time}} \\ &= \frac{4\text{m}}{2\text{s}} \\ &= 2\text{m/s} \end{aligned}$$

$$\begin{aligned} S &= \frac{0}{3} \\ &= 0\text{m/s} \end{aligned}$$

$$\begin{aligned} S &= \frac{4}{5} \\ &= 0.8\text{m/s} \end{aligned}$$

$$\begin{aligned} S &= \frac{-8}{2} \\ &= -4\text{m/s} \\ &\quad \uparrow \\ &\text{Backwards} \end{aligned}$$

The following graph describes Marissa's drive to work.



e) Calculate the rate of change for each section of the graph.

$$\begin{array}{l} \textcircled{1} \frac{T}{D} \\ \textcircled{2} \frac{0 \text{ km/min}}{5} + 5 \\ \textcircled{3} \frac{0 \text{ km/min}}{7} + 5 \\ \textcircled{4} \frac{0 \text{ km/min}}{15} + 10 \\ \textcircled{5} \frac{0 \text{ km/min}}{20} + 15 \\ \textcircled{6} \frac{0 \text{ km/min}}{18} + 3 \end{array}$$

$$S = \frac{5}{5}$$

$$= 1 \text{ km/min}$$

$$S = \frac{10}{5}$$

$$= 2 \text{ km/min}$$

$$S = \frac{3}{3}$$

$$= 1 \text{ km/min}$$

f) Write a story to describe her trip to work.

① Marissa left her house and drove towards work at 1 km/min.

② She stops at a red light ~~for~~ for 2 min.

③ She drives much faster towards work at 2 km/min.

④ Oh No! She is ~~stopped~~ ^{stopped} by the police for speeding.

⑤ She drives more slowly towards work at 1 km/min.

⑥ She stops at work.

a) How long did she stop during her trip?

She stopped for 12 min total

b) Give one reason why she might have to stop.

She stopped for a red light

c) How far from home was she after 10 min?

She was 11 km away from home.

d) At what time was she 7 km from home?

At 8 minutes.