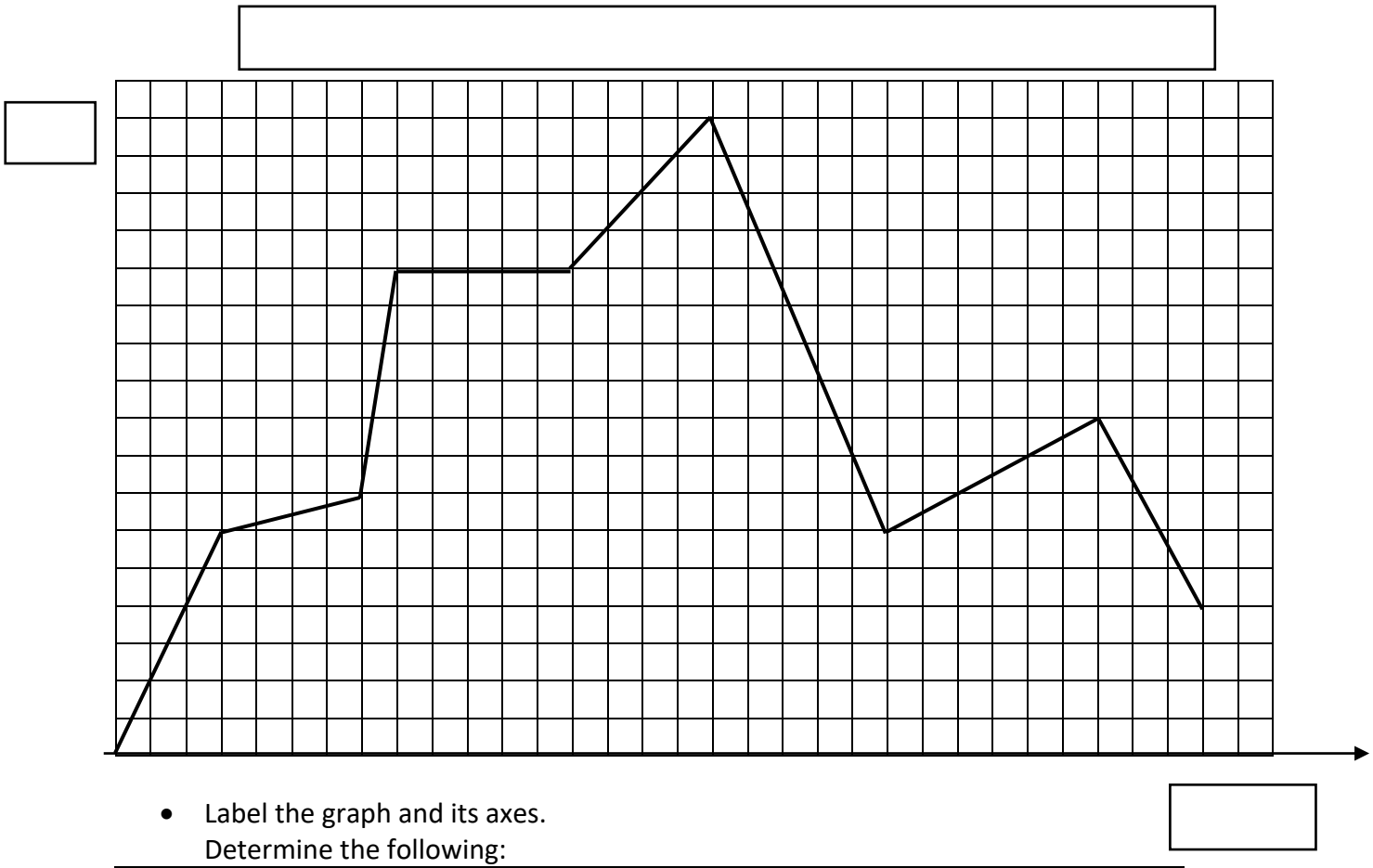
P11

1. **Describing Motion Using a Displacement versus Time Graph**

- Assume a one-to-one scale where time is measured in seconds and displacement is measured in m with South considered positive.

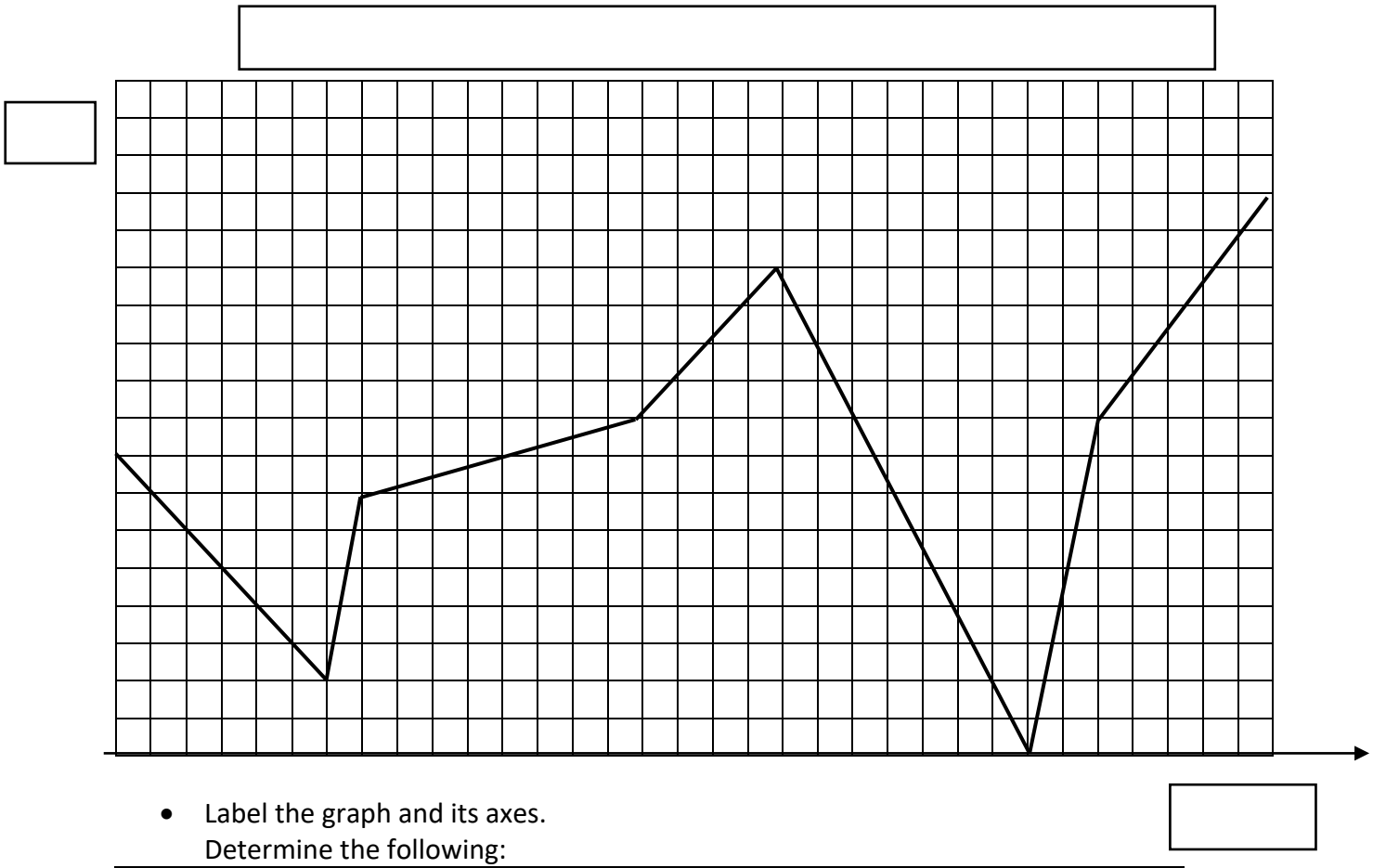


- Label the graph and its axes.
  Determine the following:

Time taken		**Average** velocity	
Time intervals (not instants) when the object is at rest		**Average** velocity during t=[0,7]s	
Initial displacement		**Average** velocity during t=[7,20]s	
Final displacement		**Average** velocity during t=[21,30]s	
Change in displacement		**Instantaneous** velocity at t=7.5 s	
Distance travelled		**Instantaneous** velocity at t=20 s	

2. **Describing Motion Using a Displacement versus Time Graph**

- Assume a one-to-one scale where time is measured in seconds and displacement is measured in m with **left** considered positive.

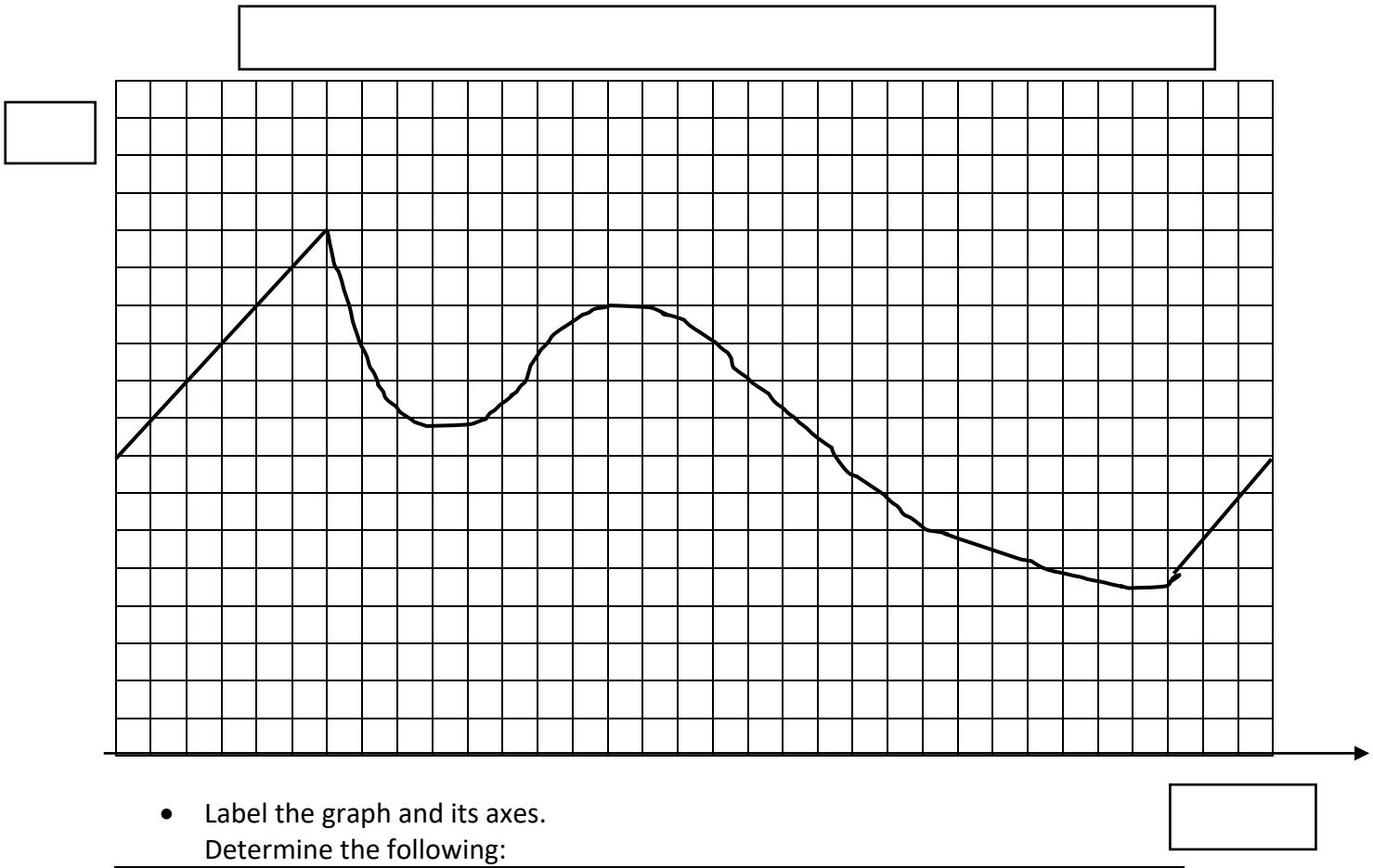


- Label the graph and its axes.
  Determine the following:

Time taken		**Average** velocity	
Time intervals (not instants) when the object is at rest		**Average** velocity during t=[0,7]s	
Initial displacement		**Average** velocity during t=[7,20]s	
Final displacement		**Average** velocity during t=[21,30]s	
Change in displacement		**Instantaneous** velocity at t=7.5 s	
Distance travelled		**Instantaneous** velocity at t=20 s	

3. **Describing Motion Using a Displacement versus Time Graph**

- Assume a one-to-one scale where time is measured in seconds and displacement is measured in m with **up** considered positive.

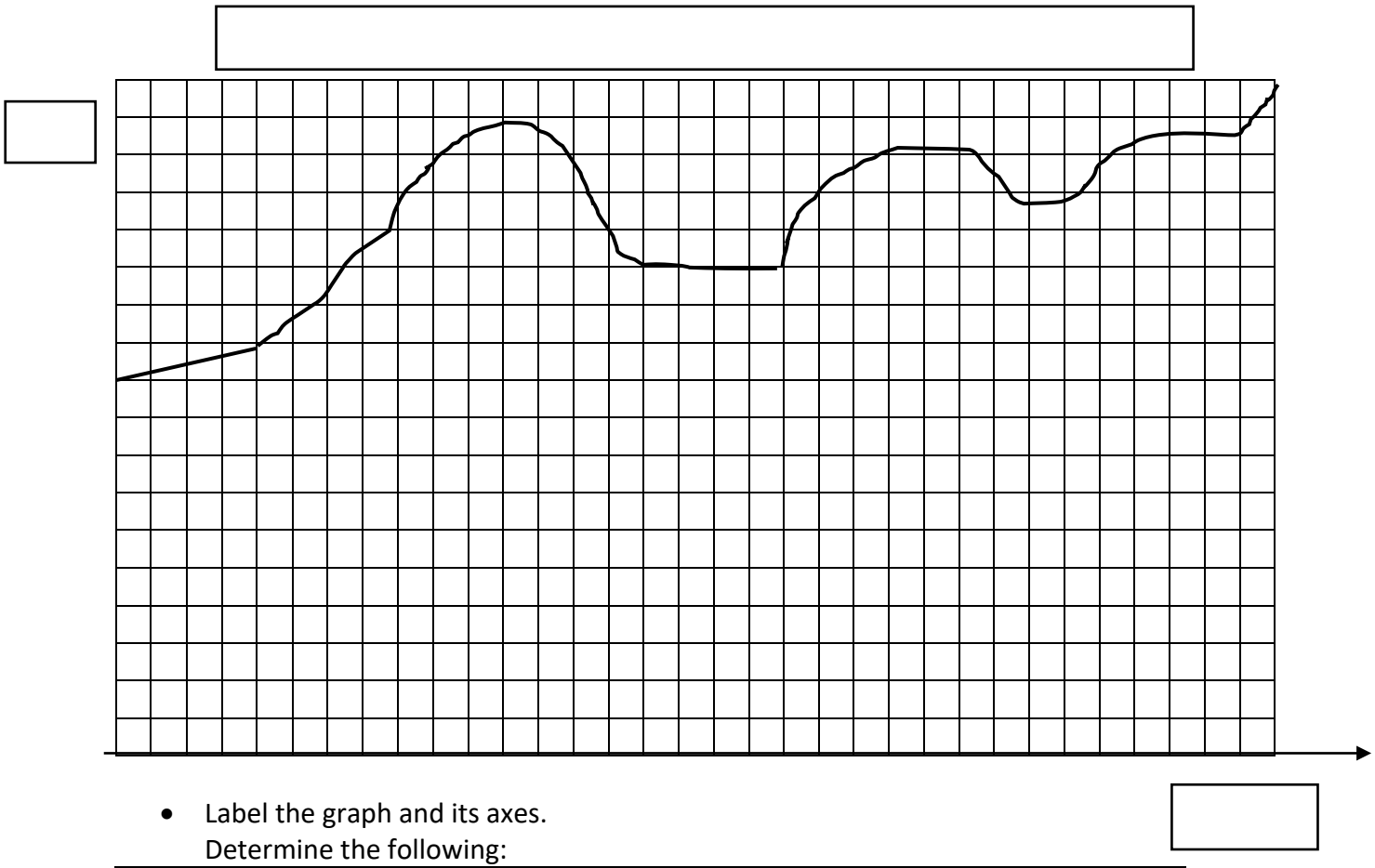


- Label the graph and its axes.
  Determine the following:

Time taken		**Average** velocity	
Time intervals (not instants) when the object is at rest		**Average** velocity during t=[0,5]s	
Initial displacement		**Average** velocity during t=[5,12]s	
Final displacement		**Average** velocity during t=[20,30]s	
Change in displacement		**Instantaneous** velocity at t=7.5 s	
Distance travelled		**Instantaneous** velocity at t=20 s	

4. **Describing Motion Using a Displacement versus Time Graph**

- Assume a one-to-one scale where time is measured in seconds and displacement is measured in m with **west** considered positive.

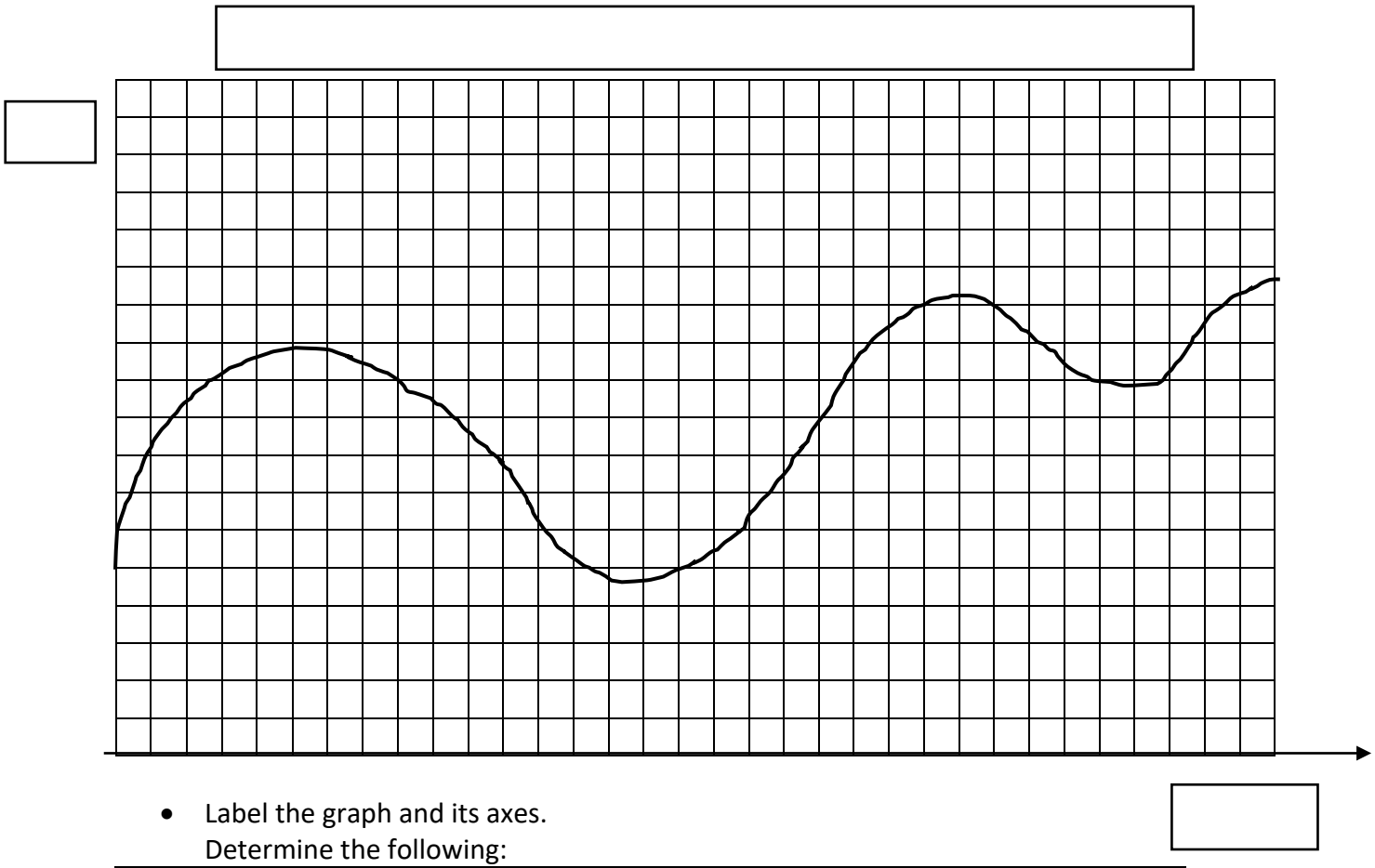


- Label the graph and its axes.
  Determine the following:

Time taken		**Average** velocity	
Time intervals (not instants) when the object is at rest		**Average** velocity during t=[0,7]s	
Initial displacement		**Average** velocity during t=[7,20]s	
Final displacement		**Average** velocity during t=[21,30]s	
Change in displacement		**Instantaneous** velocity at t=9 s	
Distance travelled		**Instantaneous** velocity at t=20 s	

5. **Describing Motion Using a Displacement versus Time Graph**

- Assume a one-to-one scale where time is measured in seconds and displacement is measured in m with **east** considered positive.



- Label the graph and its axes.
  Determine the following:

Time taken		**Average** velocity	
Time intervals (not instants) when the object is at rest		**Average** velocity during t=[0,5]s	
Initial displacement		**Average** velocity during t=[10,20]s	
Final displacement		**Average** velocity during t=[15,30]s	
Change in displacement		**Instantaneous** velocity at t=4s	
Distance travelled		**Instantaneous** velocity at t=15 s	