

Vectors & Scalars: Exam Revision Tracker



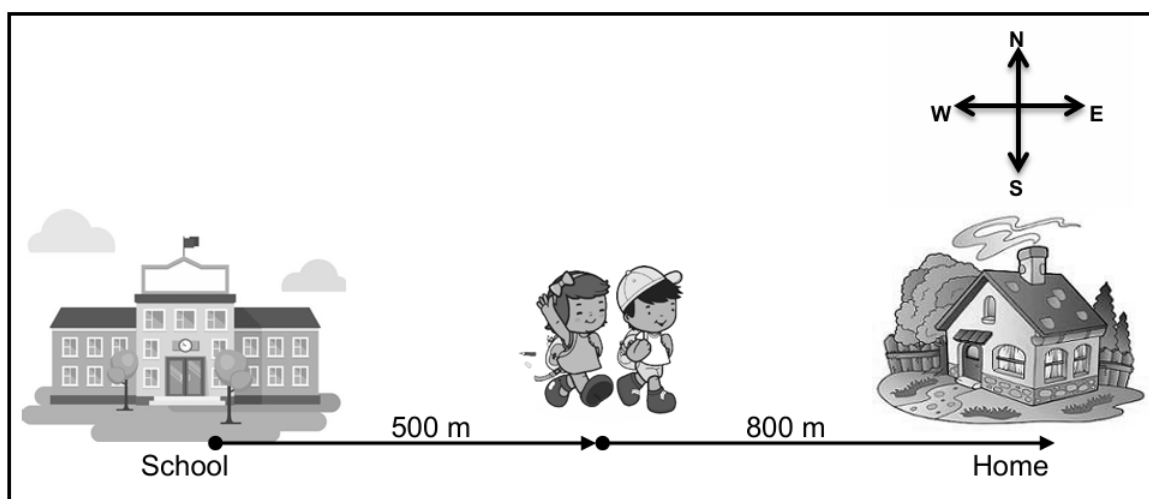
Attempt #1		Attempt #2		Attempt #3		Attempt #4		Attempt #5	
Total	Score	Total	Score	Total	Score	Total	Score	Total	Score
13		17		8		12		12	
Percentage =		Percentage =		Percentage =		Percentage =		Percentage =	

Vectors & Scalars: Attempt #1



Total = 13 Marks

A brother and sister walk home from school. After walking 500 m eastwards, the brother realises that he has left a book at school and he returns to school. His sister continues walking another 800 m to their home. She arrives home 30 minutes after leaving school.



1. Define the term *average speed*. (2)
2. Calculate the average speed of the girl from the school to her home. (4)
3. Use a vector scale diagram and represent the displacement of the boy from the time he realised he left his book at school until he reached home. Include ALL relevant information in the diagram.
 Use scale 1 cm = 100 m for the diagram. (3)
4. If the average speed of the boy is the same as that of the girl, calculate how long it would take the boy to reach home from the time they both left the school together. (4)

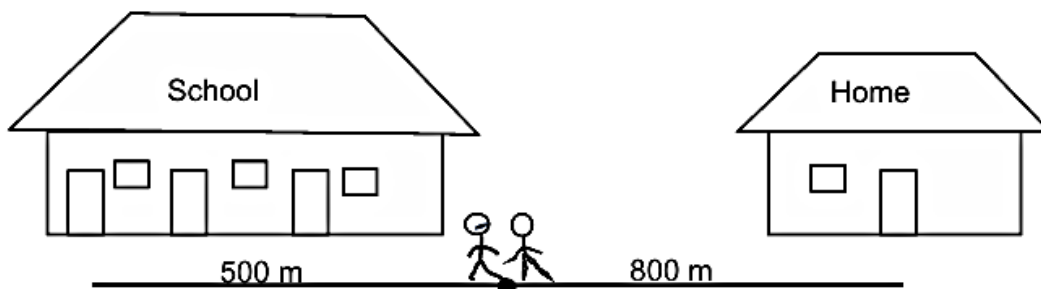
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Vectors & Scalars: Attempt #2 ⚡

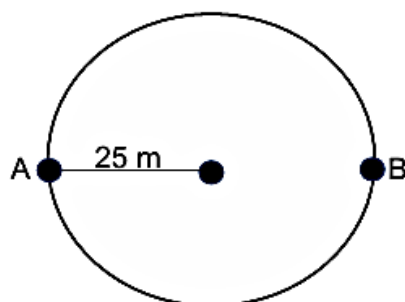
Total = 17 Marks

1. A brother and sister walk home from school. After walking 500 m eastward, the brother realises that he has left a book at school and he returns to school. His sister continues walking another 800 m to their home. She arrives home 30 minutes after leaving school.



- 1.1 Define the term *average speed*. (2)
 - 1.2 Calculate the average speed of the girl from school to her home. (3)
 - 1.3 Use a vector scale diagram and represent the displacement of the boy from the time he realised he had left his book at school until he reached home. Include all the relevant information in the diagram. (3)
- Use scale 1 cm = 100 m for the diagram.
- 1.4 Calculate how long it would take the boy to reach home, from the time they both left the school together if the average speed of the boy is $0,72 \text{ m}\cdot\text{s}^{-1}$. (4)
2. A girl travels around a circular path from point A to point B. The radius of the circular path is 25 m.

Point B is directly east of point A.



Calculate the:

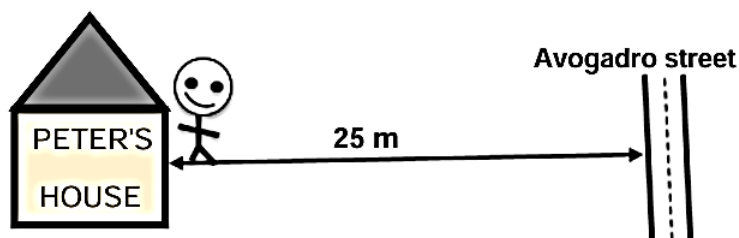
- 2.1 Distance travelled by the girl (3)
- 2.2 Displacement of the girl (2)

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Vectors & Scalars: Attempt #3 ⚡

Total = 8 Marks

1. Define the term *vector*. (2)
2. Peter stands at the front door of his house. Avogadro Street is 25 m away from the front door. Peter walks to Avogadro Street and back to the front door of his house.

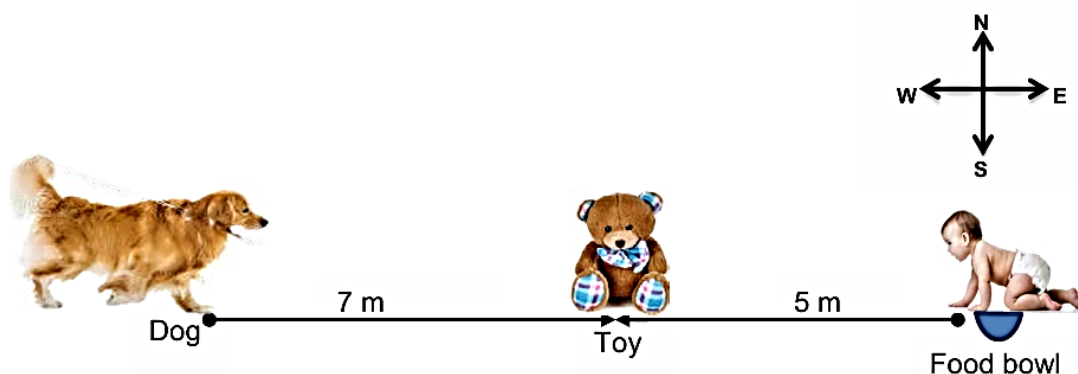


- 2.1 What is the distance that Peter has walked? (2)
- 2.2 Write Peter's final displacement? (2)
- 2.3 Is displacement a vector or a scalar? Give a reason for your answer. (2)

Vectors & Scalars: Attempt #4 ⚡

Total = 12 Marks

A baby leaves a bowl of food on the floor and crawls westwards to fetch a toy placed 5 m away. At the same time a dog walks eastwards towards the baby. It takes the baby 30 s to reach the toy. The dog walks past the toy to eat the baby's food in the bowl.



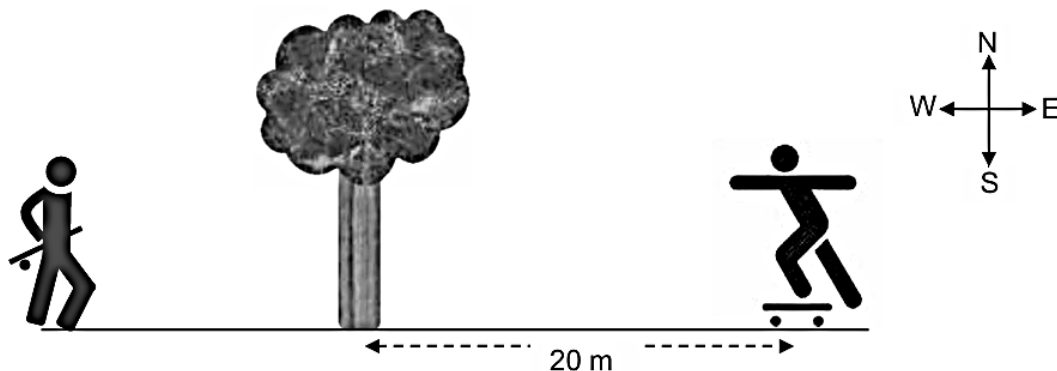
1. Define the term *displacement* in words. (2)
2. Determine the position of the dog relative to the baby before they both moved. (2)
3. Calculate the average velocity of the baby. (4)
4. If the average speed of the dog is TWICE that of the baby, calculate how long it would take the dog to reach the food bowl from the moment the dog started moving. (4)

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Vectors & Scalars: Attempt #5 ⚡

Total = 12 Marks

A boy walks in an EASTERLY direction, as shown below. After he passes a tree, he continues in the same direction for another 20 m. He then stops, climbs on his skateboard and rides in a WESTERLY direction for 25 m before he finally stops.



The resultant displacement of the boy when he finally stops is 10 m EAST of his initial position.

1. Define the term *distance*. (2)
2. Determine the initial position of the boy relative to the tree. (2)
3. Calculate the total distance that the boy moved. (2)
4. When the boy is on the skateboard, he skates at an average speed of $5 \text{ m} \cdot \text{s}^{-1}$.
 Calculate how long, in seconds, the boy is on the skateboard during the motion. (3)
5. The total time for the motion of the boy from his initial position until he finally stops is 40 s. Calculate his average velocity. (3)