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Describing Motion: Position, Direction, Speed - Worksheet

Q.1. Fill in the blank with the correct word from the word bank.

• Distance	• Position	• Displacement
• Motion		• Reference point

a) _____ is a fixed object or location that allows us to tell if something is moving.

b) _____ is the location of an object relative to a chosen reference point.

c) In science, _____ refers when an object changes its position over time in relation to a reference point.

d) _____ is the total length of the path traveled from one location to another.

e) _____ is the difference between the final position and the initial position.

Q.2. Which is an example of a reference point?

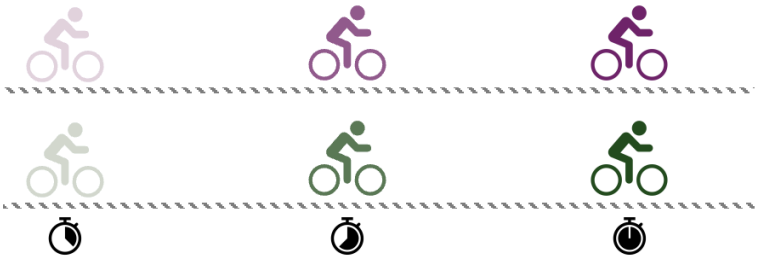
a) A moving train

b) A stationary building

c) The speed of a bicycle

d) The direction south

Q.3.



Two bicycle travel side by side at the same speed. Relative to each other, they are _____.

a) moving fast

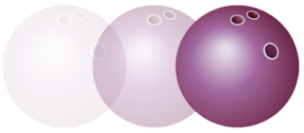
b) moving slow

c) stationary

d) accelerating

Q.4. Which situation shows motion?

a)



A rolling ball

b)



A parked bike

c)



A chair in a room

d)



Books on a shelf

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Q.5. Which of the following is **not** essential to describe the motion of an object?

a) Position
b) Direction
c) Weight
d) Speed

Q.6. If a train is moving south at 30 km/h relative to a school building, which term describes the school building?

a) Reference point
b) Moving object
c) Direction
d) Speed

Q.7. If a train moves south, what aspect of motion does "south" represent?

a) Speed
b) Direction
c) Acceleration
d) Distance

Q.8. Which term describes a measure of how fast an object changes its position, regardless of direction?

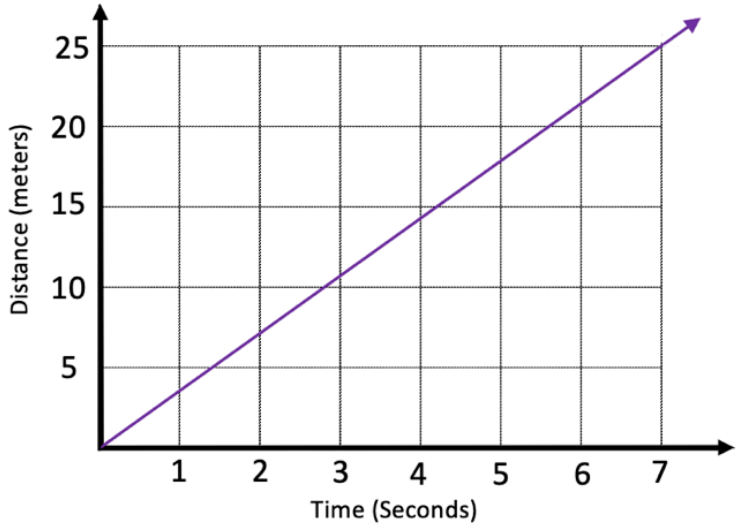
a) Speed
b) Displacement
c) Distance
d) Acceleration

Q.9. Fill in the blanks choosing the correct option

✧ An object is _____ when its position does not change in relation to a reference point.

a) accelerating
b) moving
c) stationary
d) slowing down

Q.10. A distance time graph is shown below.



What does the slope of a distance time graph indicate?

a) Acceleration
b) Displacement

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c) Direction

d) Speed

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Q.11. Which of the following statements fully describes motion?
a) The object is moving slowly.
b) The object is moving south at 5 m/s from point B.
c) The object is at point A.
d) The object is near the statue.

Q.12. Which of the following statements is **false**?
a) Distance is a scalar quantity.
b) Displacement has both magnitude and direction.
c) Displacement is always equal to the total distance covered.
d) Displacement can be zero despite motion.

Q.13. A horse runs west at 6 m/s, and a student walks west at 3 m/s. How does the horse move relative to the student?

a) East at 3 m/s
b) West at 3 m/s
c) West at 9 m/s
d) Not moving

Q.14. Speed is determined by dividing which of the following?

a) Time by distance
b) Distance by time
c) Direction by time
d) Position by distance

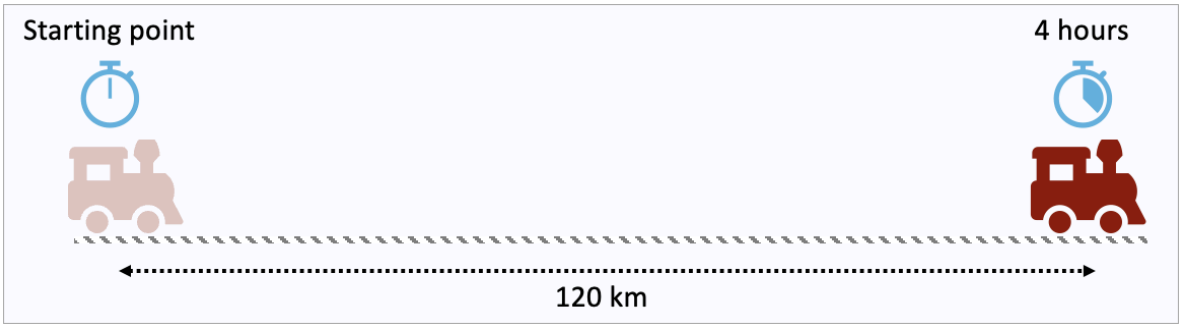
Q.15. What is the SI unit for speed?

a) Newton (N)
b) Joule (J)
c) Kilogram (kg)
d) Meter per second (m/s)

Q.16. A cyclist travels 18 m east in 6 s. What is their speed?

a) 2 m/s
b) 3 m/s
c) 5 m/s
d) 18 m/s

Q.17. The movement of a train is shown below.



What is the train's speed?

a) 30 m/s
b) 60 m/s
c) 30 km/h
d) 60 km/h

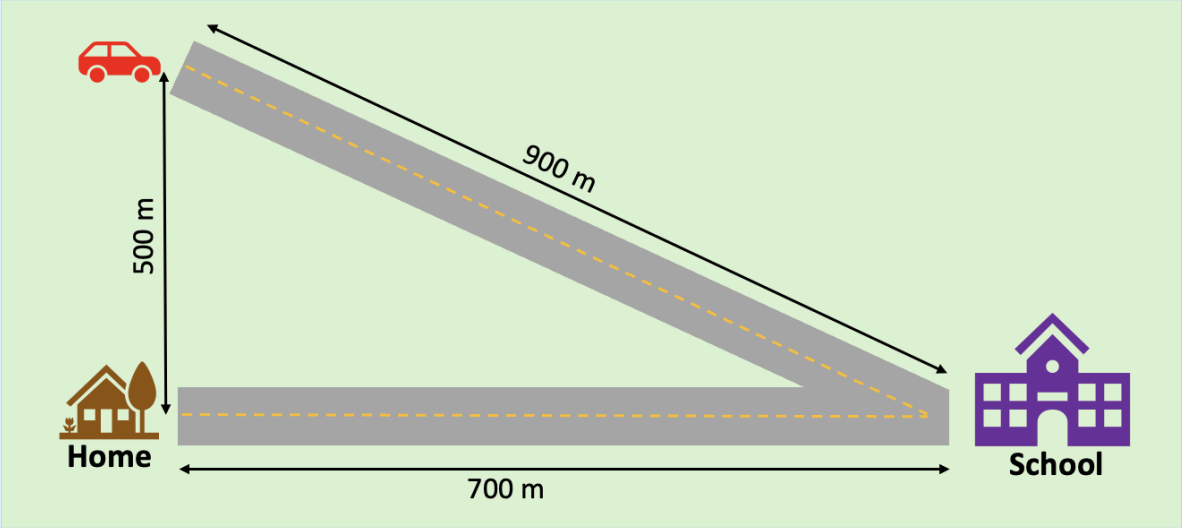
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Q.18. Velocity is determined by dividing which of the following?

a) Displacement by time
b) Distance by time
c) Position by distance
d) Direction by time

✧ The car goes to the school first and then goes home. Use this visual to answer the next two questions.



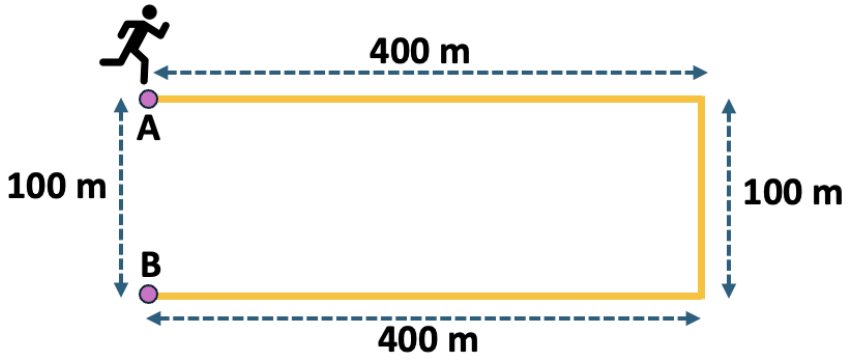
Q.19. What is the car's distance?

a) 200 m
b) 500 m
b) 900 m
b) 1600 m

Q.20. What is the car's displacement?

a) 200 m
b) 500 m
b) 900 m
b) 1600 m

✧ A runner is running from point A to point B, as shown below. Use this visual to answer the next two questions.



Q.21. What is the runner's distance?

a) 100 m
b) 400 m
b) 500 m
b) 900 m

Q.22. What is the runner's displacement?

a) 100 m
b) 400 m
b) 500 m
b) 900 m