

Higher Vectors and Scalars Answers

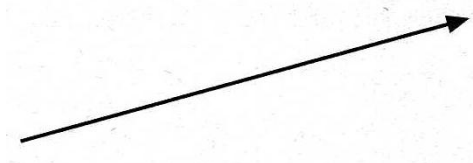
1. a) A quantity which has a magnitude and no direction.
b) A quantity which has a magnitude and a direction.

2.

<u>Scalar</u>	<u>Vector</u>
Speed	Acceleration
Power	Displacement
Energy	Momentum
Time	Weight
Distance	Force
Mass	Velocity

3. a) Total distance = 23km.
b) Average Speed = 2.88kmh^{-1} .
c) Displacement = 12.4km @ 256° .
d) Average Velocity = 1.55kmh^{-1} @ 256° .

4.



5. a) i) Displacement = 50m.
ii) Bearing = 037° .
b) Average velocity = 2.5ms^{-1} @ 037° .

6. Resultant Velocity = 5.2ms^{-1} @ 293° .

7. Displacement = 158m @ 072° .

8. Resultant Velocity = 45.8ms^{-1} @ 350° .

9. a) A scalar quantity has a magnitude and no direction.

A vector quantity has a magnitude and a direction.

b) i) Distance = 17Km. Show this please!!!

ii) Displacement = 14.5km @ 321° . Tolerance = $\pm 0.4\text{km}$ and $\pm 2^\circ$.

iii) Average Velocity = 7.25kmh^{-1} @ 321° .

c) Mir is first.

10. a) A scalar quantity has a magnitude and no direction.

A vector quantity has a magnitude and a direction.

b) i) Displacement of Andy = 540m @ 068° .

ii) Average velocity of Andy = 1.16ms^{-1} @ 068° .

iii) Average velocity of Paul = 2.5ms^{-1} @ 068° .

iv) Andy reaches the checkpoint ahead of Paul by 49s.