

QUESTION # 1:

8 Which of the following groups of physical quantities consists only of scalars?

- A acceleration, force, velocity
- B acceleration, mass, speed
- C force, time, velocity
- ☒ D mass, speed, time

Scalar	vector
Speed	velocity
distance	displacement
mass	weight
Energy	Force
power	Momentum
Time	acceleration
density	
volume	

QUESTION # 2:

9 Which is the correct statement about force and velocity?

- A Force and velocity are both scalars.
- ☒ B Force and velocity are both vectors.
- C Force is a scalar, velocity is a vector.
- D Force is a vector, velocity is a scalar.

QUESTION # 3

2 Which of the following correctly lists one scalar and one vector quantity?

	scalar quantity	vector quantity
A	displacement	work
☒ B	energy	force
C	force	acceleration
D	velocity	mass

— vector scalar
— scalar vector
— vector vector
— vector scalar

QUESTION # 4

2 Which statement about scalars and vectors is correct?

- A A scalar has direction but no size.
- ☒ B A scalar has size but no direction.
- C A vector has direction but no size.
- D A vector has size but no direction.

Scalar [size but no direction]

vector [have both size and direction]

QUESTION # 5

2 The following statements are about motion.

- 1 A plane flies due East for 600 km. — vector [it involves direction and size]
- 2 A runner's average speed in a race around a track is 5 m/s. — speed = scalar
- 3 A snail crawls at 3 mm/s in a straight line towards a lettuce. — vector
- 4 A tourist travels 500 km on a journey. — scalar or only size

Which statements describe vector quantities?

- A 1 and 2 **B 1 and 3** C 2 and 3 D 2 and 4

QUESTION # 6

2 Which pair of quantities includes one scalar and one vector?

- | | | |
|----------|-------------|----------|
| A | mass | time |
| B | temperature | time |
| C | temperature | velocity |
| D | velocity | weight |

QUESTION # 7

2 Which row correctly shows examples of a vector quantity and a scalar quantity?

	vector	scalar
A	area	force
B	mass	density
C	velocity	acceleration
D	weight	volume

QUESTION # 8

- 1 Each row contains a vector and a scalar.

In which row is the size of the vector equal to the size of the scalar?

	vector	scalar
A	displacement of a car	speed of the car
B	velocity of a car	distance travelled by the car
C	velocity of a car	speed of the car
D	weight of a car	mass of the car

Handwritten notes: m/s for displacement, velocity, speed; m for distance; kg for mass.

QUESTION # 9

- 1 Is mass a scalar or a vector, and is acceleration a scalar or a vector?

	mass	acceleration
A	scalar	scalar
B	scalar	vector
C	vector	scalar
D	vector	vector

QUESTION # 10

- 1 Which quantity is a scalar?

- A acceleration ✓
B force ✓
C temperature S
D velocity ✓

QUESTION # 11

2 Which set of quantities are all vectors?

- ☒ A acceleration, displacement, velocity
- ☐ B chemical energy, mass, power
- ☐ C extension, force, gravitational potential energy
- ☐ D weight, kinetic energy, work

QUESTION # 12

2 A car's acceleration and maximum speed are improved by using an engine of smaller mass and greater driving force.

How many of the underlined quantities are vectors?

- A 1
- ☒ B 2
- C 3
- D 4

QUESTION # 13

1 A car accelerates at 5.0 m/s^2 along a straight, horizontal road and reaches a velocity of 20 m/s in a time of 4.0 s .

During this time, its total displacement is 40 m .

Which quantity is a scalar?

- A a displacement of 40 m
- ☒ B a time of 4.0 s
- C a velocity of 20 m/s
- D an acceleration of 5.0 m/s^2

QUESTION # 14

1 Which is a vector quantity?

- A a mass of 2.0 kg
- B a temperature of -10°C
- ☒ C a weight of 15 N
- D an average speed of 20 m/s

QUESTION # 15

1 Which quantities are both vectors?

- A acceleration and length
- B distance and velocity
- C length and distance
- ☒ D velocity and acceleration

QUESTION # 16

1 Which quantity is a vector?

- A acceleration ✓
- B distance S
- C speed S
- D time S

QUESTION # 17

2 A student studies some equations.

power = work / time

☒ force = mass × acceleration (✓)

☒ velocity = displacement / time (✓)

How many vector quantities are contained in the equations?

- A 1 B 2 C 3 ☒ D 4

QUESTION # 18

2 Velocity is given by the change in displacement divided by the change in time. ✓

How many vector quantities appear in this statement?

- A 0 B 1 ☒ C 2 D 3

QUESTION # 19

1 Which list contains only scalar quantities?

A acceleration, displacement, velocity

B distance, force, speed

C force, length, time

☒ D length, mass, speed

QUESTION # 20

1 Which word is the name of a vector quantity?

A density

☒ B displacement

C energy

D speed