Multiple choice questions - Kinematics

Year: Year 12 · 10

Question 1 The gradient of a velocity-time graph gives

- ◯ **A.** distance
- ◯ **B.** acceleration
- ◯ **C.** speed
- ◯ **D.** displacement

Question 2 The area under a velocity-time graph gives

- ◯ **A.** acceleration
- ◯ **B.** displacement
- ◯ **C.** time
- ◯ **D.** force

Question 3 $v^2 = u^2 + 2as$ does NOT contain

- ◯ **A.** v
- ◯ **B.** s
- ◯ **C.** t
- ◯ **D.** a

Question 4 Convert 36 km/h to m/s.

- ◯ **A.** 10
- ◯ **B.** 36
- ◯ **C.** 100
- ◯ **D.** 3.6

Question 5 A ball dropped from rest falls for 2 s ($g = 9.8$). The speed is

- ◯ **A.** 9.8
- ◯ **B.** 19.6
- ◯ **C.** 4.9
- ◯ **D.** 39.2

Question 6 If $s = t^3$, then $v =$

- ◯ **A.** t^3
- ◯ **B.** $3t^2$
- ◯ **C.** $6t$
- ◯ **D.** $\frac{t^4}{4}$

Question 7 If $v = 4t$, then $a =$

- ◯ **A.** 4
- ◯ **B.** $4t$
- ◯ **C.** $2t^2$
- ◯ **D.** 0

Question 8 At the top of a vertical throw

- ◯ **A.** $a = 0$
- ◯ **B.** $v = 0$
- ◯ **C.** $s = 0$
- ◯ **D.** $t = 0$

Question 9 The suvat equations apply when

- ◯ **A.** acceleration is constant
- ◯ **B.** velocity is constant only
- ◯ **C.** acceleration is variable
- ◯ **D.** distance is zero

Question 10 The unit of acceleration is

- ◯ **A.** m s^{-1}
- ◯ **B.** m s^{-2}
- ◯ **C.** N
- ◯ **D.** kg m

Answer grid - Kinematics

Year: Year 12

Question	Answer	Explanation
1	**B**	Rate of change of velocity.
2	**B**	Integral of velocity.
3	**C**	No time.
4	**A**	Divide by 3.6.
5	**B**	$v = gt$.
6	**B**	Differentiate.
7	**A**	Differentiate.
8	**B**	Momentarily at rest.
9	**A**	Constant acceleration.
10	**B**	Metres per second squared.