

Name:

Exam Style Questions

Kinematics: Formulae



Equipment needed: Pen, Calculator

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

www.corbettmaths.com/contents

Video 299a



Answers and Video Solutions



1. A car is travelling with a velocity of 10m/s



The car then accelerates at 4m/s² for 3 seconds.

Use the formula $v = u + at$ to find the velocity of the car after 3 seconds.

.....m/s
(2)

2. A boy is cycling with a velocity of 2m/s



He then accelerates at 1.5m/s² for 10 seconds.

Use the formula $v = u + at$ to find the final velocity.

.....m/s
(2)

3. A train starts from rest and accelerates at 0.2m/s² for one minute.



Use the formula $v = u + at$ to calculate the velocity of the train after one minute.

.....m/s
(2)

4. A kart accelerates at 2m/s^2 for 7 seconds.
Its velocity after 7 seconds is 20m/s .



Use the formula $v = u + at$ to calculate the initial velocity of the kart.

.....m/s
(2)

5. Use the formula $v = u + at$
to find the acceleration, when:



the initial velocity is 7m/s

the time is 12 seconds

the final velocity is 16m/s

.....m/s²
(2)

6. $v = u + at$



$$u = 6 \quad a = 2.4 \quad t = 20$$

Work out the value of v

.....
(2)

7. A ball is dropped from the top of a building and reaches the ground after 3 seconds.



Given $s = 5t^2$

s is the distance travelled by the ball in metres.

t is the time taken in seconds.

Work out the height the ball was dropped from.

.....m
(2)

8. Use the formula $v = u + at$



to find the time taken, when:

the initial velocity is 24m/s

the final velocity is 2m/s

the acceleration is -5m/s^2

.....seconds
(2)

9. $v = u + at$



$v = 8 \quad a = -7 \quad t = 2.5$

Work out the value of u

.....
(2)

10. $s = ut + \frac{1}{2}at^2$



$u = 0 \quad t = 4 \quad a = 5$

Work out the value of s

.....
(2)

11. $v^2 = u^2 + 2as$



$u = 3 \quad a = 2 \quad s = 40$

Work out a value of v

.....
(2)

12. $s = ut + \frac{1}{2}at^2$



$u = 8 \quad t = 3 \quad a = 10$

Work out the value of s

.....
(2)

13. $v^2 = u^2 + 2as$



$v = 20 \quad a = 7 \quad s = 26$

Work out a value of u

.....
(2)

14. Make a the subject of $v = u + at$



$a =$
(2)