

Revision 3: Subject of Formula and Travel Graphs

Name:	Class:	Date:
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Mark	/ 44	%
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1) Make the letter in brackets the subject of the formula

[36]

a)

$$9Gx = 11S \quad (x)$$

b)

$$v + y = S \quad (v)$$

c)

$$5S = 4v \quad (S)$$

d)

$$c - 12a = 7H \quad (c)$$

e)

$$5c + 10x = 7A \quad (c)$$

f)

$$5D = 3a + 9v \quad (v)$$

g) $-8b^2 + 10a = 11N^2$ (a)

h) $c + v - B = S$ (c)

i) $7D = 8y + 9S + x$ (x)

j) $4v + 4x = 8S - w$ (v)

k) $4 = \frac{3t}{2}$ (t)

l) $\frac{z}{10L} = 9f$ (z)

m) $4 = \frac{v+3}{9}$ (v)

n) $\frac{s+8k}{T} = 6u$ (s)

o) $\frac{V}{z} = \frac{B}{w}$ (z)

p) $\frac{2V}{9z} = \frac{3l}{5i}$ (z)

q) $11 = \frac{9}{10c}$ (c)

r) $\frac{3j}{z+2G} = 8h$ (z)

s) $\frac{3}{8a} + 8 = 4$ (a)

t) $6q = \frac{4n}{t} + 5w$ (t)

u) $11 = \sqrt{12t}$ (t)

v) $\sqrt{x+10} = 9$ (x)

w) $\sqrt{y+A} = f$ (y)

x) $8L = \sqrt{5y+2T}$ (y)

y) $5s^2 = e$ (s)

z) $58 = 59s^2$ (s)

aa) $-24 + v^2 = 44$ (v)

bb) $x^2 - A = i$ (x)

cc) $g(s + q) = W$ (s)

dd) $5(-5 + y) = 4(y - 8)$ (y)

ee) $j(y + P) = w(h + y)$ (y)

ff) $\frac{b + p}{-A + b} = \frac{W}{f}$ (b)

gg) $\frac{k + x}{-l + x} = m$ (x)

hh)

$$v = u + at \quad (t)$$

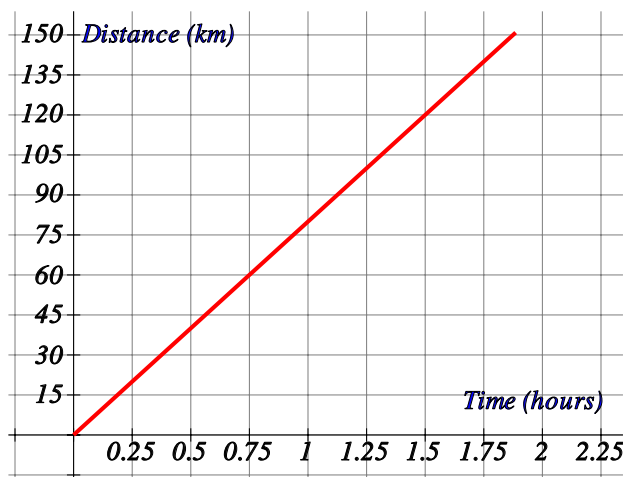
ii)

$$s = \frac{n}{2}(2a + (n - 1)d) \quad (a)$$

jj)

$$mgh = \frac{1}{2}mv^2 \quad (h)$$

2) A school bus drove to Branksome Chine for a school trip. The bus travelled from London at a steady speed of 80 kilometres per hour (km/h). The distance-time graph below shows the journey.

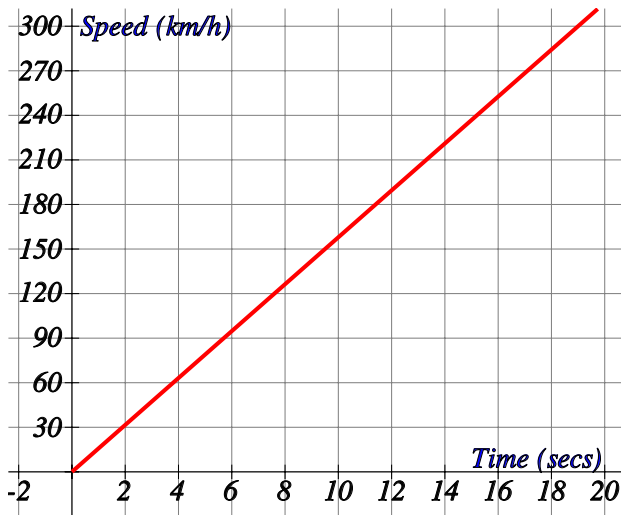


Find

- the distance to Branksome Chine.
- the time taken to get there.
- the distance travelled in 1 hour.

[1]

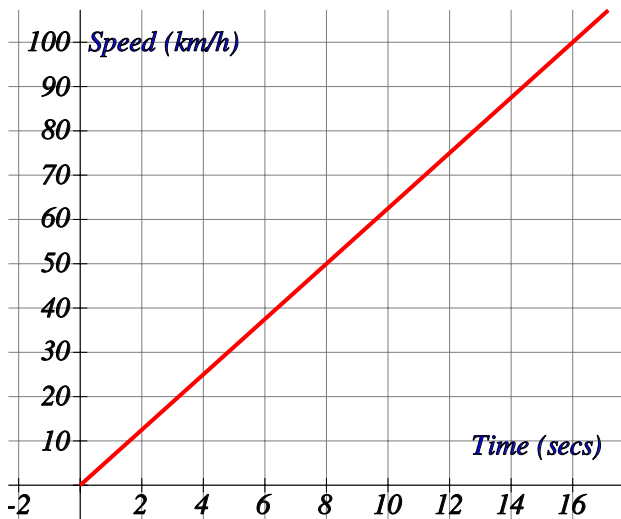
3) The speed-time graph below shows a Ferrari 288 GTO accelerating. How long does it take the car to get to 45 km/h?



[1]

4) The speed-time graph below shows a old Mini accelerating. How fast is the car after 5 secs?

[1]

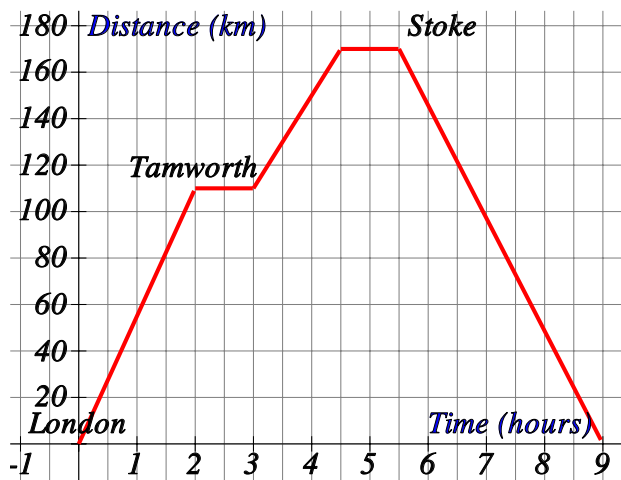


5) A school bus drove to Charmouth Beach for a school trip. The distance-time graph below shows the journey. Work out the average speed of the bus for the whole journey.



[1]

6) The distance-time graph below shows the journey a business man made from London to Stoke via Tamworth. (Leave answers to nearest whole number where necessary).

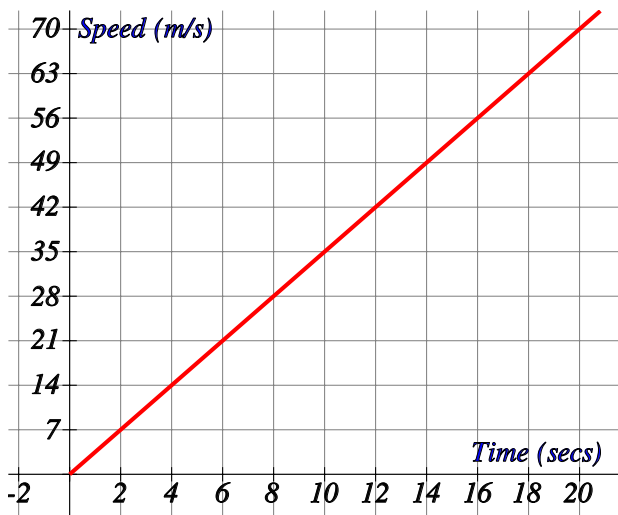


Find

- the distance to Tamworth.
- the time he spent in Tamworth.
- at what speed he travelled from Tamworth to Stoke.
- his average speed over the whole journey.

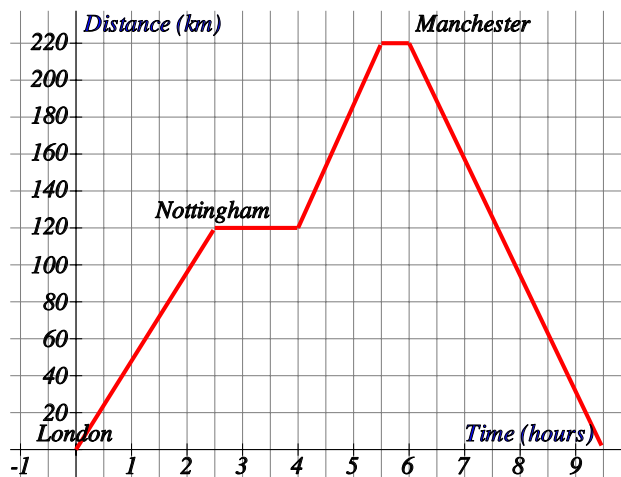
[1]

7) The speed-time graph below shows the acceleration of a Aston Martin DB9. Find an estimate for the acceleration leaving your answer to 1 decimal place.



[1]

8) The distance-time graph below shows the journey a business man made from London to Manchester via Nottingham. (Leave answers to nearest whole number where necessary).

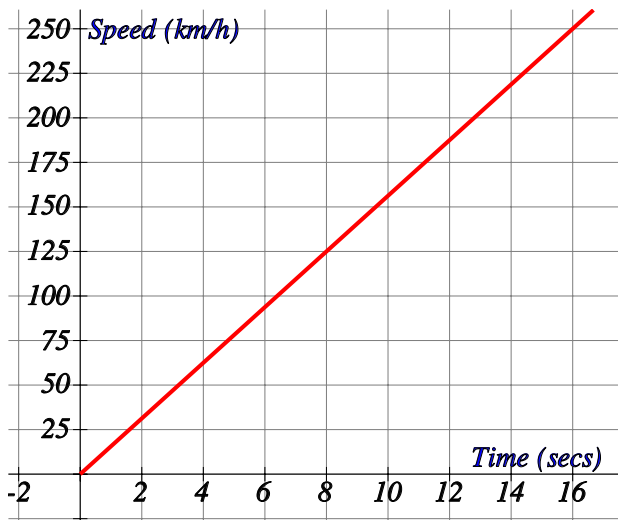


Find

- the distance to Nottingham.
- the time he spent in Nottingham.
- at what speed he travelled from Nottingham to Manchester.
- his average speed over the whole journey.

[1]

9) The speed-time graph below shows a Aston Martin DB9 accelerating. How fast is the car after 6 secs?



[1]

Solutions for the assessment Revision 3: Subject of Formula and Travel Graphs

1) a) $x = \frac{11S}{9G}$

b) $v = S - y$

c) $S = \frac{4v}{5}$

d) $c = 7H + 12a$

e) $c = \frac{7A - 10x}{5}$

f) $v = \frac{5D - 3a}{9}$

g) $a = \frac{11N^2 + 8b^2}{10}$

h) $c = S + B - v$

i) $x = 7D - 9S - 8y$

j) $v = \frac{8S - w - 4x}{4}$

k) $t = \frac{8}{3}$

l) $z = 90Lf$

m) $v = 33$

n) $s = 6Tu - 8k$

o) $z = \frac{Vw}{B}$

p) $z = \frac{10Vi}{27l}$

q) $c = \frac{9}{110}$

r) $z = \frac{3j - 16hG}{8h}$

s) $a = -\frac{3}{32}$

t) $t = \frac{4n}{6q - 5w}$

u) $t = \frac{121}{12}$

v) $x = 71$

w) $y = f^2 - A$

x) $y = \frac{64L^2 - 2T}{5}$

y) $s = \sqrt{\frac{e}{5}}$

z) $s = \sqrt{\frac{58}{59}}$

aa) $v = \sqrt{68}$

bb) $x = \sqrt{i + A}$

cc) $s = \frac{W - gq}{g}$

dd) $y = -7$

ee) $y = \frac{wh - jP}{j - w}$

ff) $b = \frac{WA + fp}{W - f}$

gg) $x = \frac{k + ml}{1 - m}$

hh) $t = \frac{v - u}{a}$

$$\text{ii) } a = \frac{s}{n} - \frac{(n-1)d}{2}$$

$$\text{jj) } h = \frac{v^2}{2g}$$

- 2)** a) 150 km b) 1.9 hours (1.8 - 2)
c) 80 km (79 - 81)

- 3)** 2.9 secs (2.4 - 3.4)

- 4)** 31 km/h (30 - 32)

- 5)** 80 km/h (79 - 81)

- 6)** a) 110 km b) 1 hour(s)
c) 40 km/h d) 38 km/h

- 7)** 3.5 m/s² (3.4 - 3.6)

- 8)** a) 120 km b) 1.5 hours
c) 67 km/h d) 46 km/h

- 9)** 94 km/h (92 - 96)