Revision 3: Subject of Formula and Travel Graphs

Name:	Class:	Date:

Mark	/ 44	%

1) Make the letter in brackets the subject of the formula [36]

a)

$9Gx = 11S$ (x)

b)

$v + y = S$ (v)

c)

$5S = 4v$ (S)

d)

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

e)

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

f)

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

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

q)

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

r)

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

s)

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

t)

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

u)

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

v)

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

w)

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

x)

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

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)

$v = u + at$ (t)

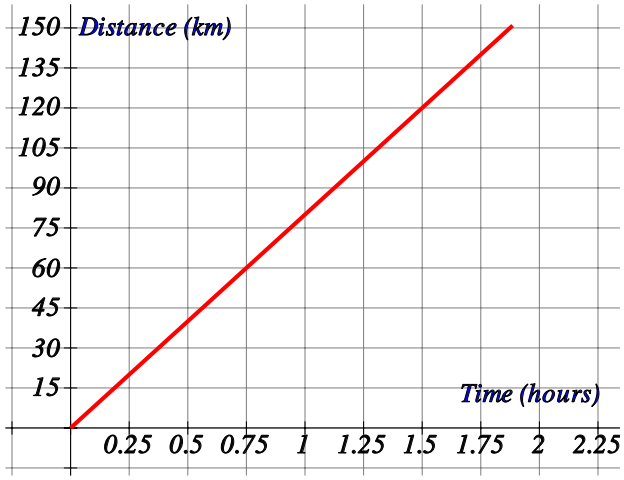
ii)

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

jj)

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

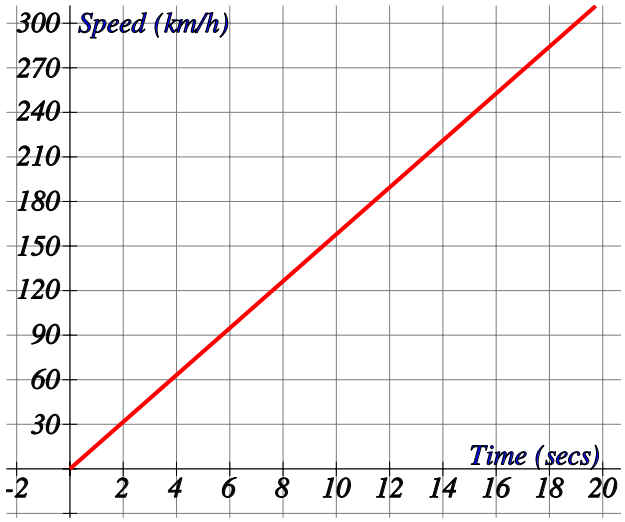
a) the distance to Branksome Chine.

b) the time taken to get there.

c) the distance travelled in 1 hour.

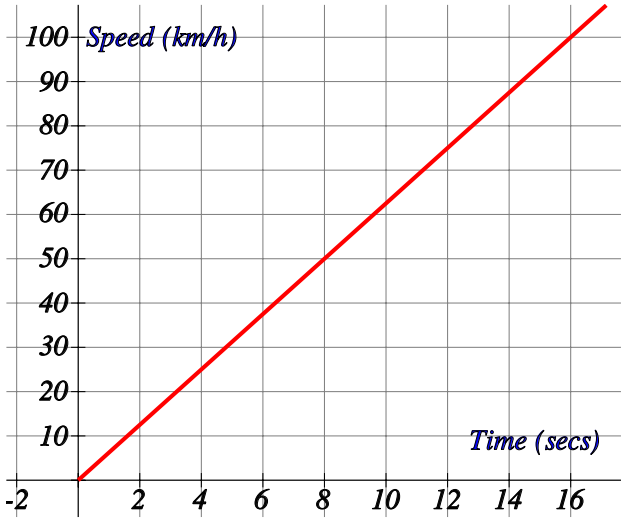
[1]

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]

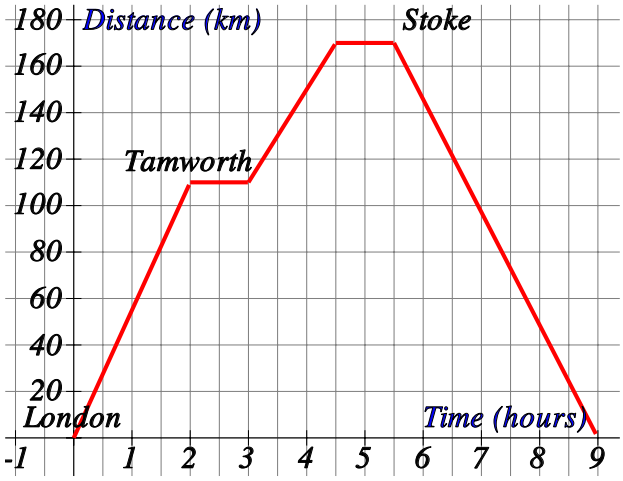
4) The speed-time graph below shows a old Mini accelerating. How fast is the car after 5 secs? [1]



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

a) the distance to Tamworth.

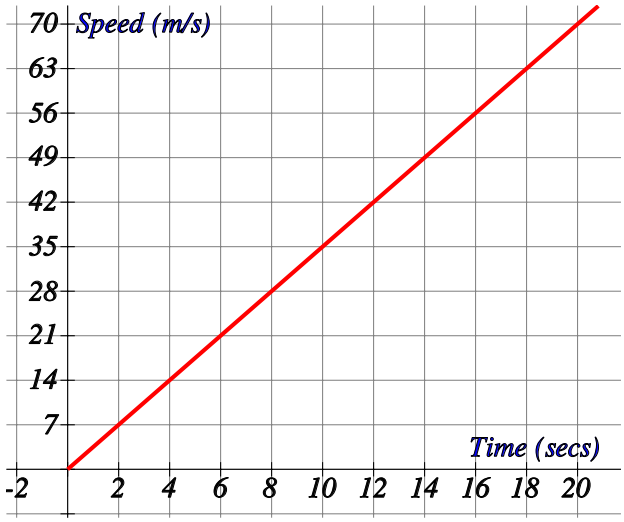
b) the time he spent in Tamworth.

c) at what speed he travelled from Tamworth to Stoke.

d) his average speed over the whole journey.

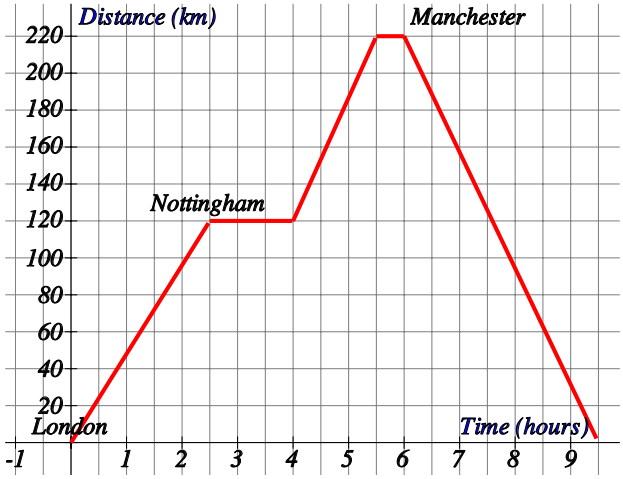
[1]

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

a) the distance to Nottingham.

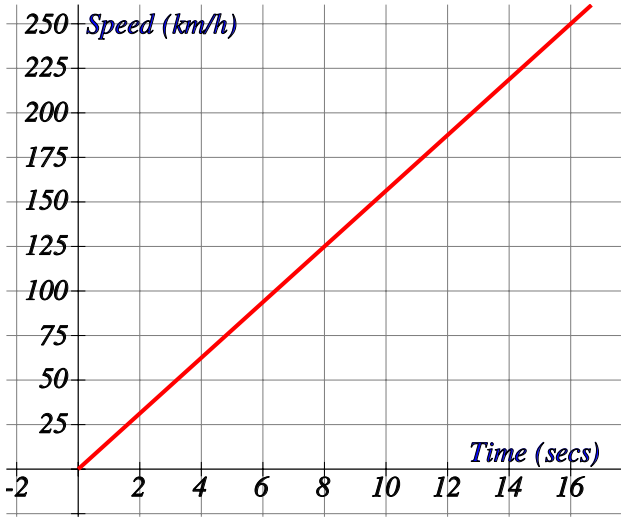
b) the time he spent in Nottingham.

c) at what speed he travelled from Nottingham to Manchester.

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

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

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/s^2 (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)