Outcome 1 – Calculating Distance, Speed & Time

Bronze examples

Examples...
A few you should know...

30 mins = 0·5 hr
15 mins = 0·25 hr
45 mins = 0·75 hr

D
S   T

How far did a bus drive in 3 hours 15 mins at an average speed of 60 m.p.h.?

Distance = 60 × 3·25 = 195 miles

A rocket flies 2415 kilometres in 5 hrs 45 mins. What is it's average speed?

Speed = 2415 ÷ 5·75 = 420 km/hr

How long did a train take to travel 315 miles at an average speed of 70 m.p.h.?

Time = 315 ÷ 70 = 4·5 hours = 4 hrs 30 mins

Silver examples

Examples...
A few examples...

6 mins = 0·1 hr   ÷ 60!!!
27 mins = 0·45 hr
40 mins = 0·67 hr

D
S   T

How far did a man run in 42 mins at an average speed of 5 m.p.h.?

Distance = 5 × 0·7 = 3·5 miles

A plane flies 920 kilometres in 2 hrs 18 mins. What is it's average speed?

Speed = 920 ÷ 2·3 = 400 km/hr

How long did a police car take to travel 33 miles at an average speed of 90 m.p.h?

Time = 33 ÷ 90 = 0·36 hours = 22 mins

Gold example

Examples...

Allan makes a number of deliveries on his motor bike. On Tuesday he travelled 222 miles with an average speed of 30 m.p.h.

For health and safety reasons, Allan is advised to take at least one hours worth of breaks in between deliveries.

Including breaks, Allan took 8 hours 12 minutes to complete his deliveries.

Did Allan take enough breaks? Give a reason for your answer.

Calculate time take for deliveries

Time = 222 ÷ 30 = 7·4 hours = 7 hrs 24 mins

Subtract this from total time

8 hrs 12 mins - 7 hrs 24 mins = 48 mins

Answer the question   No because 48 mins < 60 mins

Bronze Questions

Calculate the following distances, speeds and times...

1 D = ?
S = 60 m.p.h.
T = 5 hrs 30 mins

2 D = 40 miles
S = ?
T = 1 hr 45 mins

3 D = 175 miles
S = 50 m.p.h.
T = ?

4 D = ?
S = 100 km/hr
T = 3 hrs 15 mins

5 D = 1425 miles
S = ?
T = 4 hrs 45 mins

6 D = 382·5 kilometres
S = 90 km/hr
T = ?

7 D = ?
S = 160 m.p.h.
T = 5 hrs 30 mins

8 D = 646·25 miles
S = ?
T = 11 hrs 45 mins

9 D = 220 miles
S = 80 m.p.h.
T = ?

10 D = ?
S = 25 km/hr
T = 6 hrs 15 mins

Silver Questions

Calculate the following distances, speeds and times...

1 D = ?
S = 40 m.p.h.
T = 24 mins

2 D = 96 miles
S = ?
T = 1 hr 12 mins

3 D = 217 miles
S = 70 m.p.h.
T = ?

4 D = ?
S = 40 km/hr
T = 2 hrs 48 mins

5 D = 1564·5 miles
S = ?
T = 7 hrs 27 mins

6 D = 652 kilometres
S = 80 km/hr
T = ?

7 D = ? miles
S = 60 m.p.h.
T = 4 hrs 33 mins

8 D = 132 miles
S = ?
T = 6 hrs 36 mins

9 D = ?
S = 60 m.p.h.
T = 20 mins

10 D = 8 miles
S = ?
T = 16 mins

Gold Questions

1 Jim arrives at his work at 9 am exactly. He travelled 32 miles and travelled at an average speed of 40 m.p.h. At what time must he have left his house?

2 An overnight train left London at 2330 and arrived in Glasgow at 0618 the next day. The distance travelled by the train was 476 miles. Calculate the average speed of the train.

3 A down hill ski slop course is 0·92 kilometres long. Euan completed the course in 1 minute 55 seconds. Find his average speed in metres per second.

4 Marie flew from Barbados to Glasgow at 1410 on the 9th June.
- The distance from Barbados to Glasgow is 4120 miles.
- The average speed of the plane was 400 m.p.h.
- Glasgow time is 5 hours ahead of Barbados.
On what date and at what time did Marie arrive in Glasgow?

Bronze Answers

1.	330 miles	2.	70 m.p.h.
3.	3 hrs 30 mins	4.	325 kilometres
5.	300 m.p.h.	6.	4 hrs 15 mins
7.	880 miles	8.	55 m.p.h.
9.	2 hrs 45 mins	10.	156·25 kilometres

Silver Answers

1.	16 miles	2.	80 m.p.h.
3.	3 hrs 6 mins	4.	112 kilometres
5.	210 m.p.h.	6.	8 hrs 9 mins
7.	273 miles	8.	20 m.p.h.
9.	20 miles	10.	30 m.p.h.

Gold Answers

1. 8·12 am   2. 70 m.p.h.

3. 8 m/sec   4. 0528 on the 10th of June