Speed Distance Time - Worksheet

Skill

Group A - Calculate the speed of an object with the following properties:

Work out all answers with an appropriate unit of speed

1) Distance travelled: 100 miles
Time Taken: 10 hours

2) Distance travelled: 10 miles
Time Taken: 1 hour

3) Distance travelled: 250 miles
Time Taken: 25 hours

4) Distance travelled: $30m$
Time Taken: 15 seconds

5) Distance travelled: $15m$
Time Taken: 30 seconds

6) Distance travelled: $1m$
Time Taken: 2 seconds

7) Distance travelled: $340km$
Time Taken: 20 hours

8) Distance travelled: 63miles
Time Taken: 3 hours

9) Distance travelled: 120 miles
Time Taken: 2.5 hours

10) Distance travelled: 50 miles
Time Taken: 2.5 hours

11) Distance travelled: 50 miles
Time Taken: 150 minutes

12) Distance travelled: 50 miles
Time Taken: 2 hours 30 minutes

Group B - Calculate the distance travelled by an object with the following properties:

Work out all answers with an appropriate unit of distance

1) Speed: $20mph$
Time Taken: 2 hours

2) Speed: $10mph$
Time Taken: 2 hours

3) Speed: $40mph$
Time Taken: 2 hours

4) Speed: $50mph$
Time Taken: 2 hours

5) Speed: $50mph$
Time Taken: 4 hours

6) Speed: $50mph$
Time Taken: 5 hours

7) Speed: $24km/hr$
Time Taken: 5 hours

8) Speed: $36km/hr$
Time Taken: 6 hours

9) Speed: $95km/hr$
Time Taken: 12 hours

10) Speed: $60mph$
Time Taken: 3.5 hours

11) Speed: $60mph$
Time Taken: 210 minutes

12) Speed: $60mph$
Time Taken: 3 hours 30 minutes

Speed Distance Time - Worksheet

Group C - Calculate the time taken for an object with the following properties:

Work out all answers with an appropriate unit of time

1) Speed: $2m/sec$
Distance Travelled: $20m$

2) Speed: $4m/sec$
Distance Travelled: $40m$

3) Speed: $8m/sec$
Distance Travelled: $80m$

4) Speed: $60mph$
Distance Travelled: 60 miles

5) Speed: $120mph$
Distance Travelled: 60 miles

6) Speed: $60mph$
Distance Travelled: 120 miles

7) Speed: $5m/sec$
Distance Travelled: 15 metres

8) Speed: $9m/sec$
Distance Travelled: 81 metres

9) Speed: $16m/sec$
Distance Travelled: 40 metres

10) Speed: $100km/h$
Distance Travelled: $200km$

11) Speed: $100km/h$
Distance Travelled: $2000m$

12) Speed: $1000km/h$
Distance Travelled: $200km$

Speed Distance Time - Worksheet

Applied

1) **(a)** Convert 1 mile per minute into miles per hour.

(b) Convert 30 miles per hour to miles per minute.

2) Adita catches the train from Manchester to Newcastle at $4pm$. The average speed of the train is $70mph$. The distance between Manchester and Newcastle is 140 miles. What time does Adita arrive in Newcastle?

3) Ahmed cycles to work. His journey is broken up into three parts:
1: $20mph$ for 1 hour 15 minutes
2: $16mph$ for 120 minutes
3: $12mph$ for 45 minutes

(a) How long did he take for each part of the journey in hours?

(b) How far did he travel for each part of the journey?

(c) What was his average speed for the whole journey?

4) **(a)** Philip has 1.5 hours to complete a $15km$ race.
He runs at an average speed of $8km$ per hour.
Does he finish in time?

(b) For his next race he runs $20km$ in 2 hours.
Did he run at a faster average speed than in the $15km$ race?

Speed Distance Time - Exam Questions

1) **(a)** Michelle leaves her house at 07: 00. She drives 93 miles to work at an average speed of 36 miles per hour.

How long does her journey take in minutes?

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(2)

(b) What time does she arrive at work?

.....

(1)

(3 marks)

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2) **(a)** A jet plane flies $1500km$ in a time of 2 hours 45 minutes.
What is the average speed of the plane in km/h?
Give your answer to the nearest km/h.

.....

(3)

(b) Convert your answer to part (a) to m per minute.
Give your answer to the nearest m/min.

.....

(2)

(5 marks)

Speed Distance Time - Exam Questions

3) The speed limit on a road is 60 miles per hour.
A car drives 21 miles in 24 minutes.
Show that the car was travelling within the speed limit?

(3 marks)

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4) Convert $6km/h$ into m/s. Give you answer to $3sf$.

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(3 marks)

Speed Distance Time - Answers

	Question	Answer
	Skill Questions	
Group A	Calculate the speed of an object with the following properties. Work out all answers with an appropriate unit of speed.	
	1) Distance travelled: 100 miles Time Taken: 10 hours	**1)** $10mph$
	2) Distance travelled: 10 miles Time Taken: 1 hour	**2)** $10mph$
	3) Distance travelled: 250 miles Time Taken: 25 hours	**3)** $10mph$
	4) Distance travelled: $30m$ Time Taken: 15 seconds	**4)** $2m/s$
	5) Distance travelled: $15m$ Time Taken: 30 seconds	**5)** $0.5m/s$
	6) Distance travelled: $1m$ Time Taken: 2 seconds	**6)** $0.5m/s$
	7) Distance travelled: $340km$ Time Taken: 20 hours	**7)** $17km/h$
	8) Distance travelled: 63 miles Time Taken: 3 hours	**8)** $21mph$
	9) Distance travelled: 120 miles Time Taken: 2.5 hours	**9)** $48mph$
	10) Distance travelled: 50 miles Time Taken: 2.5 hours	**10)** $20mph$
	11) Distance travelled: 50 miles Time Taken: 150 minutes	**11)** $20mph$ or $0.33miles/min$
	12) Distance travelled: 50 miles Time Taken: 2 hours 30 minutes	**12)** $20mph$

Speed Distance Time - Answers

Group B	Calculate the distance travelled by an object with the following properties. Work out all answers with an appropriate unit of distance.	
	1) Speed: $20mph$, Time Taken: 2 hours	**1)** 40 miles
	2) Speed: $10mph$, Time Taken: 2 hours	**2)** 20 miles
	3) Speed: $40mph$, Time Taken: 2 hours	**3)** 80 miles
	4) Speed: $50mph$, Time Taken: 2 hours	**4)** 100 miles
	5) Speed: $50mph$, Time Taken: 4 hours	**5)** 200 miles
	6) Speed: $50mph$, Time Taken: 5 hours	**6)** 250 miles
	7) Speed: $24km/hr$, Time Taken: 5 hours	**7)** $120km$
	8) Speed: $36km/hr$, Time Taken: 6 hours	**8)** $216km$
	9) Speed: $95km/hr$, Time Taken: 12 hours	**9)** $1140km$
	10) Speed: $60mph$, Time Taken: 3.5 hours	**10)** 210 miles
	11) Speed: $60mph$, Time Taken: 210 minutes	**11)** 210 miles
	12) Speed: $60mph$, Time Taken: 3 hours 30 minutes	**12)** 210 miles

Speed Distance Time - Answers

Group C	Calculate the time taken for an object with the following properties. Work out all answers with an appropriate unit of time	
	1) Speed: $2m/sec$, Distance Travelled: $20m$	**1)** 10 seconds
	2) Speed: $4m/sec$, Distance Travelled: $40m$	**2)** 10 seconds
	3) Speed: $8m/sec$, Distance Travelled: $80m$	**3)** 10 seconds
	4) Speed: $60mph$, Distance Travelled: 60 miles	**4)** 1 hour
	5) Speed: $120mph$, Distance Travelled: 60 miles	**5)** 0.5 hours (30 mins)
	6) Speed: $60mph$, Distance Travelled: 120 miles	**6)** 2 hours
	7) Speed: $5m/sec$, Distance Travelled: 15 meters	**7)** 3 seconds
	8) Speed: $9m/sec$, Distance Travelled: 81 meters	**8)** 9 seconds
	9) Speed: $16m/sec$, Distance Travelled: 40 meters	**9)** 2.5 seconds
	10) Speed: $100km/h$, Distance Travelled: $200km$	**10)** 2 hours
	11) Speed: $100km/h$, Distance Travelled: $2000m$	**11)** 1 min 12 s or 1.2 mins
	12) Speed: $1000km/h$, Distance Travelled: $200km$	**12)** 0.2 hours or 12 mins

Speed Distance Time - Answers

	Question	Answer
	Applied Questions	
1)	**a)** Convert 1 mile per minute into miles per hour. **b)** Convert 30 miles per hour to miles per minute.	**a)** $60\ mph$ **b)** 0.5 miles per minute
2)	Adita catches the train from Manchester to Newcastle at $4pm$. The average speed of the train is $70mph$. The distance between Manchester and Newcastle is 140 miles. What time does Adita arrive in Newcastle?	Time taken = 2 hours Time arrives = $6pm$
3)	Ahmed cycles to work. His journey is broken up into three parts: 1: $20mph$ for 1 hour 15 minutes 2: $16mph$ for 120 minutes 3: $12mph$ for 45 minutes **a)** How long did he take for each part of the journey in hours? **b)** How far did he travel for each part of the journey? **c)** What was his average speed for the whole journey?	**a)** Part 1: 1.25 hours Part 2: 2 hours Part 3: 0.75 hours **b)** Part 1: 25 miles Part 2: 32 miles Part 3: 9 miles Total distance = 66 miles Total Time = 4 hours **c)** Average Speed: $16.5\ mph$
4)	**a)** Philip has 1.5 hours to complete a $15km$ race. He runs at an average speed of $8km$ per hour. Does he finish in time? **b)** For his next race he runs $20km$ in 2 hours. Did he run at a faster average speed than in the $15km$ race?	**a)** No 1.5 hours $\times\ 8km/h$ $12km$ **b)** Speed in 2^{nd} race = $10km/h$ Yes he is faster

Speed Distance Time - Mark Scheme

	Question	Answer	
	Exam Questions		
1) (a)	Michelle leaves her house at 07: 00. She drives 93 miles to work at an average speed of 36 miles per hour. How long does her journey take in minutes?	(a) $93 \div 36$ $\frac{31}{12}$ hours or 2 hours 35 minutes 155 minutes	(1) (1)
(b)	What time does she arrive at work?	(b) 09: 35	(1)
2) (a)	A jet plane flies $1500km$ in a time of 2 hours 45 minutes. What is the average speed of the plane in km/h? Give your answer to the nearest km/h.	(a) 2.75 hours seen $1500 \div 2.75$ $545\ km/h$	(1) (1) (1)
(b)	Convert your answer to part (a) to m per minute. Give your answer to the nearest m/min.	(b) Alternative methods allowed "545" $\times$ 1000 $\div$ 60 $9083\ m/min$	(1) (1)
3)	The speed limit on a road is 60 miles per hour. A car drives 21 miles in 24 minutes. Show that the car was travelling within the speed limit?	Yes **with working** 24 minutes $=$ 0. 4 hours $21 \div 0.4$ $52.5\ mph$	(1) (1) (1)
4)	Convert $6km/h$ into m/s. Give you answer to $3sf$.	Either seen: $6km = 6000m$ 1 hour $=$ 60 minutes $=$ 3600 seconds $6000 \div 3600$ $1.67\ m/s$	(1) (1) (1)