

Speed, Distance, Time Worksheet

Use * m/s, km/h, or mph.

Calculate Speed

$$\bar{v} = \frac{d}{t}$$

1. A car travels a distance of 540km in 6 hours. Calculate the speed of the car.
2. John is a runner. He runs the 100m sprint in 20.0 s. Calculate the John's speed.
3. Lauren walks 400 m in 125 s . Calculate Lauren's average speed.
4. A mouse runs a distance of 2.0 metres in 16 seconds. Calculate the speed of the mouse.
5. A rocket travels, a distance of 576 m in 6.0 s, calculate the average speed of the rocket
6. A cyclist travels 20 km in 4 hrs. Calculate the speed of the cyclist.
7. At the equator, the earth spins a distance of 25,992miles every day. Calculate the average speed of the Earth in mph.
8. The distance between two cities is 144 km, it takes me 3 hours to travel between these cities, determine my average speed.

Calculate Distance

$$d = \bar{v} \times t$$

9. A whale swims at a constant speed of 8.0 m/s for 17 s. Calculate the distance travelled by the whale.
10. A girl cycles for 30s at a speed of 4 m/s. Calculate the distance she travels.
11. Jim travelled at a speed of 18.0 m/s for 2.0 s. Calculate the distance Jim travels.

Calculate Time

$$t = \frac{d}{\bar{v}}$$

12. A vehicle drives a distance of 26000 m at a speed of 65m/s, calculate the time taken for this journey.
13. A train travels at a speed of 16 m/s and travel a distance of 3200 m, calculate the time it takes the train to complete this journey.
14. Calculate the time it takes to travel a distance of 672 km at a speed of 96 km/h.
15. A beetle travels at a speed of 0.09 m/s, it travels a distance of 1.08 m before it is caught in a jar. Calculate the time taken for the beetle to run.
16. Carlisle is a distance of 35 miles away from Lockerbie. If I travelled at a constant speed of 117 mph. calculate the time taken for this journey.

Dance Questions- Questions with a twist!

17. Susie estimated that she can run for hours at a steady rate of 8.0 mph. She enters a marathon, a distance of 26 miles. Calculate the time it takes her to complete the race. Give answer in hours/minutes.
18. The earth takes one year to go round the sun. The distance travelled is 584 million miles if there are 365 days in a year,
 - a. Calculate the speed the Earth travels at in miles per day.
 - b. Calculate the speed of the Earth in miles per hour.
19. Neil travelled 36 km at a speed of 8 km/h. Grant travelled 48km at a speed of 10 km/h
 - a. Determine whose journey took the shortest time.
 - b. Determine the time difference in minutes
20. Mr Dunn drives 64.8 km from work at a speed of 48 km/h. Mrs Dunn drives 81.2 km from work at a speed of 58 km/h. They both leave work at the same time.
 - a. Calculate the time taken for each person to travel home.
 - b. State which person arrives home first.
 - c. Calculate the time between the first and second person getting home.
21. Marc was told his dinner would be ready at 18:00. He left his house at 12:00 and travelled in his car at an average speed of 45 mph to his mum's house 300 miles away.
 - a. Calculate the time taken for Marc to travel this distance.
 - b. Did Marc make it home in time for dinner? *You must justify your answer by showing all of your working*
22. Callum writes down his jog times for each day.

Mon - 15 min

Tue - 10 min

Wed - 12 min

Thu - 5 min

Fri - No jog.

 - a. State on which day did he jogs the furthest.
 - b. He jogs at a constant speed of 9km/h. Calculate the distance he jogs each day.

Speed, Distance, Time Answers.

- 1) 90 km/h
- 2) 5 m/s
- 3) 3.2 m/s
- 4) 0.13 m/s
- 5) 96 m/s
- 6) 5 km/h
- 7) 1083mph
- 8) 48km/h
- 9) 136m
- 10) 120 m
- 11) 36 m
- 12) 400 s
- 13) 200 s
- 14) 7 hours
- 15) 12 s
- 16) 18 mins, 0.3 hours
- 17) 3 hours 15 mins
- 18) 1,600,000 miles per day. Which is 67 000, mph
- 19) a) Neil was quickest at 4.5 hours. Grant was 4.8 hours. b) 18 mins
- 20) a) Mr Dunn takes 1.35 hours. Mrs Dunn takes 1.4 hours b) Mr Dunn arrives first c) by 3 minutes
- 21) No, he arrived at 18:40
- 22)
 - a. Mon - 2.25 km Tue - 1.5 km Wed - 1.8 km Thu - 0.75 km.
 - b. He travelled furthest on Monday

check these in word then split the screen so that you can see the answers

Speed, Distance, Time Answers.

1) 90 km/h

$$\bar{v} = \frac{d}{t} = \frac{540}{6} = 90 \text{ kmh}^{-1}$$

2) 5 m/s

$$\bar{v} = \frac{d}{t} = \frac{100}{20} = 5 \text{ ms}^{-1}$$

3) 3.2 m/s

$$\bar{v} = \frac{d}{t} = \frac{400}{125} = 3.2 \text{ ms}^{-1}$$

4) 0.13 m/s

$$\bar{v} = \frac{d}{t} = \frac{2.0}{16} = 0.125 \cong 0.13 \text{ ms}^{-1}$$

5) 64 m/s

$$\bar{v} = \frac{d}{t} = \frac{576}{6} = 64 \text{ ms}^{-1}$$

6) 5 km/h

$$\bar{v} = \frac{d}{t} = \frac{20}{4} = 5 \text{ kmh}^{-1}$$

7) 1083mph

There are 24 hours in a day

$$\bar{v} = \frac{d}{t} = \frac{25992}{24} = 1083 \text{ mph}$$

8) 48km/h

$$\bar{v} = \frac{d}{t} = \frac{144}{3} = 48 \text{ kmh}^{-1}$$

9) 136m

$$\bar{v} = \frac{d}{t}$$

$$8.0 = \frac{d}{17}$$

$$d = 8.0 \times 17 = 136 \text{ m}$$

10) 120 m

$$\bar{v} = \frac{d}{t}$$

$$4.0 = \frac{d}{30}$$

$$d = 4.0 \times 30 = 120 \text{ m}$$

11) 36 m

$$\bar{v} = \frac{d}{t}$$

$$18.0 = \frac{d}{2.0}$$

$$d = 18.0 \times 2.0 = 36 \text{ m}$$

12) 400 s

$$\bar{v} = \frac{d}{t}$$

$$65 = \frac{26000}{t}$$

$$t = \frac{26000}{65} = 400 \text{ s} = 6 \text{ min } 40 \text{ s}$$

13) 200 s

$$\bar{v} = \frac{d}{t}$$

$$16 = \frac{3200}{t}$$

$$t = \frac{3200}{16} = 200 \text{ s} = 3 \text{ min } 20 \text{ s}$$

14) 7 hours

$$\bar{v} = \frac{d}{t}$$

$$96 = \frac{672}{t}$$

$$t = \frac{672}{96} = 7 \text{ hours}$$

15) 12 s

$$\bar{v} = \frac{d}{t}$$

$$0.09 = \frac{1.08}{t}$$

$$t = \frac{1.08}{0.09} = 12 \text{ s}$$

16) 18 mins, 0.3 hours

$$\bar{v} = \frac{d}{t}$$

$$117 = \frac{35}{t}$$

$$t = \frac{35}{117} = 0.3 \text{ h} = 18 \text{ mins}$$

17) 3 hours 15 mins

$$\bar{v} = \frac{d}{t}$$

$$8 = \frac{26}{t}$$

$$t = \frac{26}{8} = 3.25 \text{ h} = 3 \text{ hours } 15 \text{ mins}$$

18) 1,600,000 miles per day. Which is 67 000, mph

$$\bar{v} = \frac{d}{t} = \frac{584\,000\,000}{365} = 1.6 \text{ million miles per day}$$

$$\bar{v} = \frac{d}{t} = \frac{584\,000\,000}{(365 \times 24)} = 67 \text{ thousand mph}$$

19) a) Neil was quickest at 4.5 hours. Grant was 4.8 hours. b) 18 mins

$\bar{v} = \frac{d}{t}$ $8 = \frac{36}{t}$ $t = \frac{36}{8} = 4.5 \text{ h} = 4 \text{ hours } 30 \text{ mins}$	$\bar{v} = \frac{d}{t}$ $10 = \frac{48}{t}$ $t = \frac{48}{10} = 4.8 \text{ h} = 4 \text{ hours } 48 \text{ mins}$
4 hours 48 mins- 4 hours 30 mins = 18 mins, or 4.8-4.5 = 0.3 hours, which is 18 mins	

20) a) Mr Dunn takes 1.35 hours. Mrs Dunn takes 1.4 hours b) Mr Dunn arrives first c) by 3 minutes

$\bar{v} = \frac{d}{t}$ $48 = \frac{64.8}{t}$ $t = \frac{64.8}{48} = 1.35 \text{ h} = 1 \text{ hours } 21 \text{ mins}$	$\bar{v} = \frac{d}{t}$ $58 = \frac{81.2}{t}$ $t = \frac{81.2}{58} = 1.4 \text{ h} = 1 \text{ hours } 24 \text{ mins}$
Mr Dunn arrives first as he takes less time	
1 hours 24 mins- 1 hours 21 mins = 3 mins, or 1.4-1.35 = 0.05 hours, which is 3 mins	

21) No, he arrived at 18:40

$\bar{v} = \frac{d}{t}$ $45 = \frac{300}{t}$ $t = \frac{300}{45} = 6.6 \text{ h} = 6 \text{ hours } 40 \text{ mins}$	If Marc left at 12:00 and he takes 6 hours and 40 mins he will arrive at 18:40 or 6:40 pm. He therefore is late for dinner
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22)

a. Mon - 2.25 km Tue - 1.5 km Wed - 1.8 km Thu - 0.75 km.

b. He travelled furthest on Monday

Monday	Tuesday	Wednesday	Thursday
15 mins =0.25 h	10 mins =0.1666666 h	12 mins =0.2 h	5 mins =0.083 h
As he jogs at 9 km/h at all times! He travels furthest on Monday			
$\bar{v} = \frac{d}{t}$ $9 = \frac{d}{0.25}$ $d = 9 \times 0.25$ $d = 2.25 \text{ km}$	$\bar{v} = \frac{d}{t}$ $9 = \frac{d}{0.1666666}$ $d = 9 \times 0.16666666$ $d = 1.5 \text{ km}$	$\bar{v} = \frac{d}{t}$ $9 = \frac{d}{0.2}$ $d = 9 \times 0.2$ $d = 1.8 \text{ km}$	$\bar{v} = \frac{d}{t}$ $9 = \frac{d}{0.083}$ $d = 9 \times 0.083$ $d = 0.75 \text{ km}$