Year 6 Homework Answers

Module 12: Speed, distance, time

1.

a) speed = distance ÷ time

b) time = distance ÷ speed

c) distance = speed × time

d) distance ÷ speed = time

2.

3.5 h
90 km
22 m/s
137.5 km

3.

a) speed = 108 km/h; distance = 324 km; time = 3 hours

b) speed = 45 km/h; distance = 292.5 km; time = 6.5 hours

c) speed = 5 km/h; distance = 25 km; time = 5 hours

4.

3 × 2.5 = 7.5 km

5.

375 ÷ 125 = 3 hours

6.

90 minutes = 1.5 hours

50 × 1.5 = 75 km

7.

800 ÷ 25 = 32 m/min

8.

100 ÷ 4 = 25 m/s

9.

Jack: 100 ÷ 12.5 = 8 m/s

Michael: 200 ÷ 24 = 8.33 m/s

Michael is faster, by 0.33 m/s

10.

80 × 2.5 = 200 km

11.

3 minutes = 180 seconds

3.5 × 180 = 630 m

12.

30 minutes = 0.5 h;

45 minutes = 0.75 h

East: 258 ÷ 0.5 = 516 km/h

South: 279 ÷ 0.75 = 372 km/h

(Students can calculate the speed without converting minutes to hour by getting the answer in km/min. Answers are still correct)

Aeroplane has faster speed when towards east.

13.

15 minutes = 0.25 h;

30 minutes = 0.5 h

Charlie: $7 \times 0.25 = 1.75$ km

Zara: $15 \times 0.5 = 7.5$ km

14.

$7.5 \div 6 = 1.25$ h

1.25 hours = 75 minutes

15.

On the way there: $80 \times 2.5 = 200$ km

On the way back: $100 \times 2 = 200$ km

Total distance: $200 + 200 = 400$ km

16.

12 minutes = 0.2 h

$60 \times 0.2 = 12$ km

17.

$12 \div 40 = 0.3$ h

0.3 h = 18 minutes

$18 - 9 = 9$ minutes

9 minutes longer than usual.

18.

$440 \div 5.5 = 80$ km/h

19.

6 hours 24 minutes = 6.4 hours

480 ÷ 6.4 = 75 km/h

20.

$206\frac{1}{4}$ km = 206.25 km

Sailboat: 206.25 ÷ 75 = 2.75 h

Motoboat: 105 ÷ 60 = 1.75 h

Sailboat spent longer out at sea.

21.

224 ÷ 80 = 2.8 h

2.8 h < 3 h

The truck will make it to the farm in time.

22.

Sammy: 5 × 1.8 = 9 km

Lucy: 3 × 1.8 = 5.4 km

Distance between florist and patisserie: 9 + 5.4 = 14.4 km

23.

Encounter problem

840 ÷ (4 + 3) = 120 s

120 s = 2 minutes

12:30 + 2 minutes = 12:32

24.

Chasing problem

Distance difference: $80 \times 0.5 = 40$ km ahead

Speed difference: $100 - 80 = 20$ km/h

Time catches up: $40 \div 20 = 2$ h

25.

Distance difference: 2500 m = 2.5 km

Speed difference: $18 - 13 = 5$ km/h

Time: $2.5 \div 5 = 0.5$ h

Distance when B overtake A:

$0.5 \times 18 = 9$ km

Find how many laps: $9 \text{ km} \div 2.5 = 3.6$ laps

After 3.6 laps B over take A.