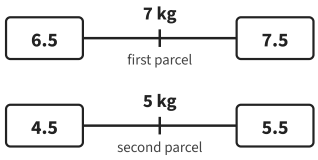
Bounds in calculations

ANSWERS

1

Two parcels are 7 kg and 5 kg, each to the nearest kg. Find the **greatest** possible total mass.

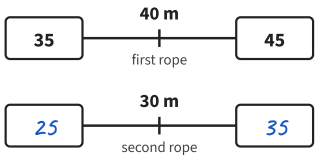


Greatest total = 7.5 + 5.5

Answer 13 kg

2

Two ropes are 40 m and 30 m, each to the nearest 10 m. Find the **greatest** possible total length.

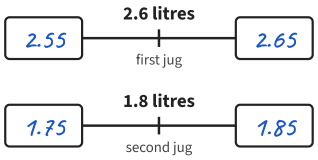


Greatest total = 45 + 35

Answer 80 m

3 *Notice the change!*

Two jugs hold 2.6 litres and 1.8 litres, each to 1 decimal place. Find the **least** possible total.

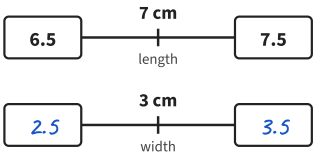


Least total = 2.55 + 1.75

Answer 4.3 litres

4 *Notice the change!*

A rectangle is 7 cm by 3 cm, each to the nearest cm. Find the **greatest** possible area.

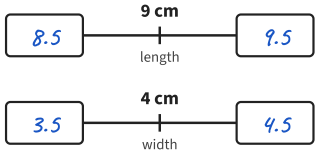


Greatest area = 7.5 × 3.5

Answer 26.25 cm²

5 *Notice the change!*

A rectangle is 9 cm by 4 cm, each to the nearest cm. Find the **least** possible area.

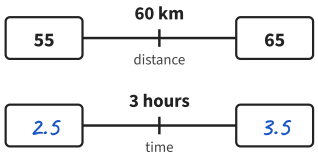


Least area = 8.5 × 3.5

Answer 29.75 cm²

6 *Notice the change!*

A boat sails 60 km, to the nearest 10 km, in 3 hours, to the nearest hour. Find the **greatest** possible average speed.

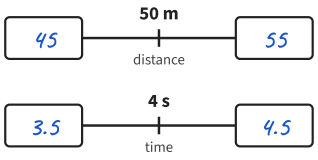


Greatest speed = 65 ÷ 2.5

Answer 26 km/h

7 *Notice the change!*

A drone flies 50 m, to the nearest 10 m, in 4 s, to the nearest second. Find the **least** possible speed.

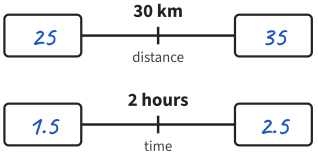


Least speed = 45 ÷ 4.5

Answer 10 m/s

8

A bus travels 30 km, to the nearest 10 km, in 2 hours, to the nearest hour. Sam says the greatest possible average speed is 35 ÷ 2.5 = 14 km/h. Explain his mistake. Find the greatest possible speed, to 2 decimal places.



divide by the lower bound: 35 ÷ 1.5

Answer 23.33 km/h

Bounds in calculations *further practice*

ANSWERS

9

Three boxes are 4 kg, 6 kg and 9 kg, each to the nearest kg.
Find the greatest possible total mass.

4.5 + 6.5 + 9.5

Answer 20.5 kg

10

A square has sides of 6 cm, to the nearest cm. Find the least possible perimeter.

4 × 5.5

Answer 22 cm

11

A field is 80 m by 50 m, each to the nearest 10 m. Find the greatest possible area.

85 × 55

Answer 4675 m²

12

A runner covers 400 m, to the nearest 10 m, in 52 s, to the nearest second. Find the greatest possible speed. Give your answer to 2 decimal places.

405 ÷ 51.5 = 7.864...

Answer 7.86 m/s

13

A tile is 0.3 m by 0.2 m, each to 1 decimal place. Find the least possible area.

0.25 × 0.15

Answer 0.0375 m²

14

Each crate weighs 20 kg, to the nearest kg. Find the greatest possible mass of 12 crates.

12 × 20.5

Answer 246 kg

15

A car uses 6 litres of fuel, to the nearest litre, to travel 90 km, to the nearest 10 km. Find the least possible number of km it travels on each litre.
Give your answer to 2 decimal places.

85 ÷ 6.5 = 13.076...

Answer 13.08 km

16

A lift's safe load is 100 kg, to the nearest 10 kg. Ben puts in 4 boxes, each 23 kg to the nearest kg. Can he be certain the lift is safe?
Show how you know.

greatest total 4 × 23.5 = 94

least safe load 95

Answer Yes: 94 < 95