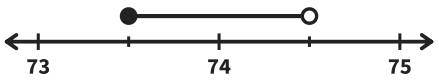
Limits of accuracy

ANSWERS

1

A table is 74 cm long, to the nearest cm. Find the lower bound and the upper bound.



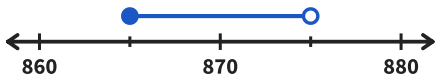
half of 1: 0.5

lower bound: 73.5 cm

upper bound: 74.5 cm

2

A van's load is 870 kg, to the nearest 10 kg. Find the lower bound and the upper bound.



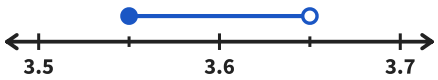
half of 10: 5

lower bound: 865 kg

upper bound: 875 kg

3

A kayak is 3.6 m long, to 1 decimal place. Find the lower bound and the upper bound.



half of 0.1: 0.05

lower bound: 3.55 m

upper bound: 3.65 m

4

A running track is 400 m long, to the nearest 100 m. Find the lower bound and the upper bound.

half of 100: 50

Bounds 350 m and 450 m

5 Notice the change!

Nadia walks 46 m, then 38 m. Both are to the nearest metre. Find the greatest possible total distance.

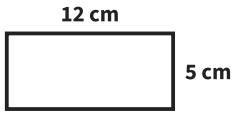
upper bounds: 46.5 and 38.5

add: 46.5 + 38.5

Answer 85 m

6

This tile is 12 cm by 5 cm, both to the nearest cm. Find its least possible perimeter.



lower bounds: 11.5 and 4.5

perimeter: 11.5 + 4.5 + 11.5 + 4.5

Answer 32 cm

7

A plant is 50 cm tall, to the nearest 10 cm. Owen says the bounds are 49.5 cm and 50.5 cm. Explain his mistake.

he went 0.5 either side, but half of 10 is 5

Bounds 45 cm and 55 cm

8

A gap is 65 cm wide and a fridge is 63 cm wide, both to the nearest cm.
Will the fridge definitely fit in the gap?

fridge, greatest: 63.5 cm

gap, least: 64.5 cm

Answer Yes, 63.5 < 64.5

Limits of accuracy *further practice*

ANSWERS

9

A suitcase weighs 7.4 kg, to 1 decimal place. Find the lower bound and the upper bound.

half of 0.1 is 0.05

Answer 7.35 kg and 7.45 kg

10

A film lasts 35 minutes, to the nearest 5 minutes. Find the lower bound and the upper bound.

half of 5 is 2.5

Answer 32.5 and 37.5 minutes

11

A fence has three panels: 1.8 m, 1.8 m and 2.4 m, each to 1 decimal place. Find the least possible total length of the fence.

lower bounds: 1.75, 1.75, 2.35

1.75 + 1.75 + 2.35

Answer 5.85 m

12

A square mat has sides of 15 cm, to the nearest cm. Find its greatest possible perimeter.

upper bound 15.5 on every side

4 × 15.5

Answer 62 cm

13

A length has a lower bound of 8.5 cm and an upper bound of 9.5 cm. What was it rounded to, and to what accuracy?

the middle is 9

1 cm apart, so half of 1 either side

Answer 9 cm, to the nearest cm

14

A box holds 12 tins of beans. Each tin weighs 400 g, to the nearest 10 g. Find the greatest possible mass of the 12 tins, in kg.

12 × 405 = 4860 g

Answer 4.86 kg

15

A lift's limit is 600 kg, to the nearest 10 kg. Seven bags each weigh 85 kg, to the nearest kg. Is the load definitely under the limit?

greatest load: 7 × 85.5 = 598.5 kg

least limit: 595 kg

Answer No, 598.5 > 595

16

A path is a 2.4 m slab, to 1 decimal place, and a 75 cm slab, to the nearest 5 cm, end to end. Find the greatest possible length of the path, in metres.

2.45 m and 77.5 cm = 0.775 m

2.45 + 0.775

Answer 3.225 m