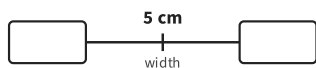
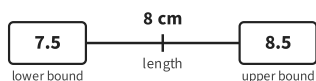


Bounds in Calculations



1 greatest area: use both upper bounds

A rectangle is 8 cm by 5 cm, each to the nearest cm. Find the **greatest** possible area.

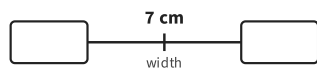
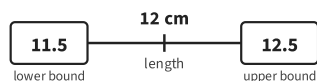


Greatest area = $8.5 \times$

Answer cm²

2

A rectangle is 12 cm by 7 cm, each to the nearest cm. Find the **least** possible area.

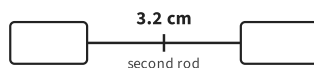
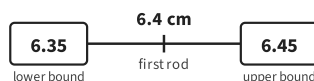


Least area = $\times$

Answer cm²

3

Two rods are 6.4 cm and 3.2 cm long, each to 1 decimal place. Find the **greatest** possible total length.

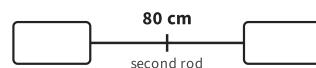
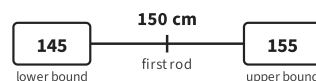


Greatest total = +

Answer cm

4

Two rods are 150 cm and 80 cm long, each to the nearest 10 cm. Find the **least** possible total length.

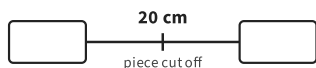
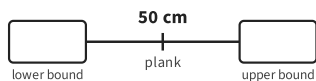


Least total = +

Answer cm

5 Notice the change!

A plank is 50 cm long. A piece 20 cm long is cut off. Both are to the nearest 10 cm. Find the **greatest** possible length left.

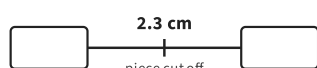
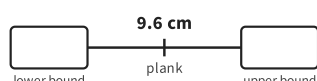


Greatest length = -

Answer cm

6

A plank is 9.6 cm long. A piece 2.3 cm long is cut off. Both are to 1 decimal place. Find the **least** possible length left.

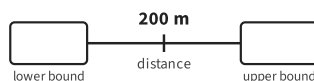


Least length = -

Answer cm

7

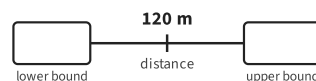
A runner covers 200 m, to the nearest 10 m, in 25 s, to the nearest second. Find the **greatest** possible speed.



Answer m/s (2 d.p.)

8

A runner covers 120 m, to the nearest 10 m, in 16 s, to the nearest second. Find the **least** possible speed.



Answer m/s (2 d.p.)

Bounds in Calculations *further practice*



9

A stone has a mass of 450 g, to the nearest 10 g. Its volume is 60 cm³, to the nearest cm³. Find the **least** possible density. Give your answer to 2 decimal places.

Answer

10

A circle has a radius of 6 cm, to the nearest cm. Find the **greatest** possible area of the circle. Give your answer to 1 decimal place.

Answer

11

A rectangle has an area of 50 cm², to the nearest cm². Its length is 8 cm, to the nearest cm. Find the **greatest** possible width. Give your answer to 2 decimal places.

Answer

12

A lift has a safe load of 1000 kg, to the nearest 100 kg. Thirteen boxes each weigh 72 kg, to the nearest kg. Can you be certain that the lift can safely carry all thirteen boxes at once? Show how you know.

Answer

13

$a = 3.2$, $b = 5.7$ and $c = 2.4$, each to 1 decimal place. Find the **greatest** possible value of $\frac{a+b}{c}$. Give your answer to 2 decimal places.

Answer

14

Sam has a ribbon 2 m long, to the nearest 10 cm. He cuts pieces that are each 15 cm long, to the nearest cm. What is the **greatest** number of pieces Sam can be certain of cutting?

Answer

15

A train travels 150 km, to the nearest km, in 2.5 hours, to the nearest tenth of an hour. Find the bounds of its average speed. Then give the speed to an accuracy that both bounds round to.

Answer

16

$a = 9$ and $b = 4$, each to the nearest whole number. Zoe says the least possible value of $a - b$ is $8.5 - 3.5 = 5$. Is Zoe right? Explain.

Answer