Outcome 2 – Tolerance Notation

Bronze example

Examples...

The legal temperature for working in an office must lie between 17°C and 23°C.

Write this in tolerance form.

(17 + 23) ÷ 2 = 20 1. Find the middle!

(20 ± 3) °C

17 and 23 are ""how many away" from 20? 3!

2. Write in tolerance form.

Silver example

Examples...

An organic fruit and veg shop guarantees that all their oranges will have a diameter between. 54 and 59 mm.

Write this in tolerance form.

(54 + 59) ÷ 2 = 56·5 1. Find the middle!

(56·5 ± 2·5) mm

54 and 59 are ""how many away" from 56·5? 2·5!

2. Write in tolerance form.

Gold examples

Examples...

A tolerance is given as (..... ± 0·8) cm.
The minimum value allowed is 35·7 cm.
What must the maximum value be?

Max Value = 35·7 + 1·6 = 37·3 cm

A tolerance is given as (..... ± 3·75) m.
The maximum value allowed is 62·3 m.
What must the minimum value be?

Min Value = 62·3 - 7·5 = 54·8 m

Bronze Questions

Write each of the following in tolerance form...

1. min = 42 mm, max = 48 mm
2. min = 11 cm, max = 23 cm
3. min = 72 m, max = 82 m
4. min = 33 km, max = 39 km
5. min = 51 kg, max = 59 kg
6. min = 2 litres, max = 6 litres
7. min = 402 ml, max = 448 ml
8. min = 11°C, max = 51°C

Silver Questions

Write each of the following in tolerance form...

1. min = 31 mm, max = 38 mm
2. min = 52 cm, max = 57 cm
3. min = 44 m, max = 49 m
4. min = 19 km, max = 20 km
5. min = 91 kg, max = 92 kg
6. min = 1 litres, max = 8 litres
7. min = 307 ml, max = 312 ml
8. min = 21°C, max = 28°C

Gold Questions

1. A tolerance is given as (..... ± 1·4) m. The minimum value allowed is 52·7 m. What must the maximum value be?
2. A tolerance is given as (..... ± 4·75) km. The minimum value allowed is 12·62 km. What must the maximum value be?
3. A tolerance is given as (..... ± 0·4) secs. The maximum value allowed is 63·1 secs. What must the minimum value be?
4. A tolerance is given as (..... ± 1·85) kg. The maximum value allowed is 40·62 kg. What must the minimum value be?

Bronze Answers

1. (45 ± 3) mm
2. (17 ± 6) cm
3. (77 ± 5) m
4. (36 ± 3) km
5. (55 ± 4) kg
6. (4 ± 2) litres
7. (425 ± 23) ml
8. (31 ± 20)°C

Silver Answers

1. (34·5 ± 3·5) mm
2. (54·5 ± 2·5) cm
3. (46·5 ± 2·5) m
4. (19·5 ± 0·5) km
5. (91·5 ± 0·5) kg
6. (4·5 ± 3·5) litres
7. (309·5 ± 2·5) ml
8. (24·5 ± 3·5)°C

Gold Answers

1. Max Value = 55·5 m
2. Max Value = 22·12 km
3. Min Value = 62·3 secs
4. Min Value = 36·92 kg