Averages with…

Fractions

Find the mean, median, and range of:

$$3\frac{1}{3},\ 6\frac{1}{6},\ \text{and } 2\frac{1}{2}$$

Area and Perimeter

A rectangle has a width of 3 cm and a height of 2 cm.

Draw a second rectangle so that the two rectangles have a mean area of 13 cm² and have perimeters with a range of 8 cm.

Standard Form

Find the median of the following:

$$3{\times}10^{-4},$$
$$4{\times}10^{-3},$$
$$5{\times}10^{-6},$$
$$6{\times}10^{-5}.$$

Surds

John says:

'The mean of $\sqrt{12}$, $\sqrt{27}$, and $\sqrt{48}$ is $\sqrt{29}$.'

Explain and correct the mistake that John has made.

Bounds

Find the upper and lower bounds for the median of the following numbers:

3.5 (one decimal place),

27 (two significant figures),

30 (nearest ten).

Angles

Find the upper bound for the median angle in a quadrilateral.

Is it possible to actually draw a quadrilateral with that median angle?

Averages with...

Fractions

Find the mean, median, and range of:

$$3\frac{1}{3}, \ 6\frac{1}{6}, \ \text{and } 2\frac{1}{2}$$

Standard Form

Find the median of the following:

$$3\times10^{-4},$$
$$4\times10^{-3},$$
$$5\times10^{-6},$$
$$6\times10^{-5}.$$

Bounds

Find the upper and lower bounds for the median of the following numbers:

3.5 (rounded to one decimal place),

27 (to two significant figures),

30 (to the nearest ten).

Averages with...

Area and Perimeter

A rectangle has a width of 3 cm and a height of 2 cm.

Draw a second rectangle so that the two rectangles have a mean area of 13 cm^2 and have perimeters with a range of 8 cm.

Surds

Zoe says:

'The mean of $\sqrt{12}$, $\sqrt{27}$,

and $\sqrt{48}$ is $\sqrt{29}$.'

Explain and correct the mistake that Zoe has made.

Angles

Find the upper bound for the median angle in a quadrilateral.

Is it possible to actually draw a quadrilateral with that median angle?

Averages with...

Fractions

Find the mean, median, and range of:

$$3\frac{1}{3}, \quad 6\frac{1}{6}, \quad \text{and } 2\frac{1}{2}$$

Mean = 4

Median = $3\frac{1}{3}$

Range = $3\frac{2}{3}$

Standard Form

Find the median of the following:

3×10^{-4},

4×10^{-3},

5×10^{-6},

6×10^{-5}.

1.8×10^{-4}

Bounds

Find the upper and lower bounds for the median of the following numbers:

3.5 (rounded to one decimal place),

27 (to two significant figures),

30 (to the nearest ten).

$25 \leq \text{Median} < 27.5$

Averages with…

Area and Perimeter	Area = 20 cm² Perimeter = 18 cm
A rectangle has a width of 3 cm and a height of 2 cm. Draw a second rectangle so that the two rectangles have a mean area of 13 cm² and have perimeters with a range of 8 cm.	 4 cm 5 cm

Surds	Zoe found the square root of the mean of 12, 27 and 48.
Zoe says: *'The mean of $\sqrt{12}$, $\sqrt{27}$, and $\sqrt{48}$ is $\sqrt{29}$.'* Explain and correct the mistake that Zoe has made.	She should have done: Mean $= \dfrac{\sqrt{12}+\sqrt{27}+\sqrt{48}}{3}$ $= \dfrac{2\sqrt{3}+3\sqrt{3}+4\sqrt{3}}{3}$ $= \dfrac{9\sqrt{3}}{3} = 3\sqrt{3}\ \left(= \sqrt{27}\right)$

Angles	
Find the upper bound for the median angle in a quadrilateral. Is it possible to actually draw a quadrilateral with that median angle?	Upper bound is 120°, which would be achieved if the angles were 0°, 120°, 120°, and 120°. But this quadrilateral is not itself possible due to the 0°.