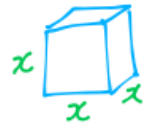
A cube has a volume of 64cm³
Calculate the length of each side.



Vol = x^3

$x^3 = 64$

$x = \sqrt{64} = 4$

4cm

Find $\frac{2}{3}$ of 81

81 ÷ 3 = 27
27 x 2 = 54

54

Write $\sqrt{98}$ in its simplest form

$\sqrt{98} = \sqrt{49} \times \sqrt{2}$
$7 \times \sqrt{2}$
$= 7\sqrt{2}$

A train ticket increases by 10% and now costs £13.20
What did it originally cost?

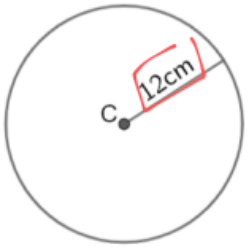
100% - 10% = 110%

÷11: 110% = £13.20 → 10% = £1.20 ÷11

x10: 10% = £1.20 → 100% = £12 x10

£ 12

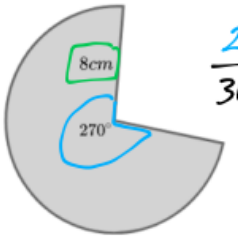
Calculate the area in terms of π



Area = πr^2
$\pi \times 12^2$

144π cm²

Calculate the area in terms of π



$\frac{270}{360} \times \pi \times 8^2$
$\frac{3}{4} \times 64\pi$

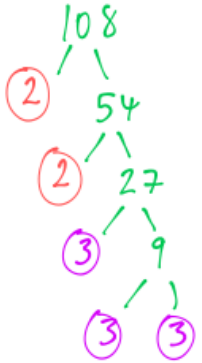
48π cm²

$\frac{4}{5} - \frac{3}{7} = \frac{7 \times 4}{7 \times 5} - \frac{3 \times 5}{7 \times 5} = \frac{28}{35} - \frac{15}{35} = \frac{13}{35}$

$\frac{13}{35}$

$4\frac{5}{6} \times 2\frac{3}{7} = \frac{29}{6} \times \frac{17}{7} = \frac{493}{42} = 11\frac{31}{42}$

Write 108 as a product of prime factors



2 x 2 x 3 x 3 x 3 or $2^2 \times 3^3$

Evaluate $81^{1/2}$

$\sqrt{81} = 9$

Evaluate 15^{-1}

$\frac{1}{15}$

Evaluate $(\frac{2}{7})^{-1}$

$\frac{7}{2}$

Evaluate $(\frac{4}{9})^{\frac{3}{2}}$

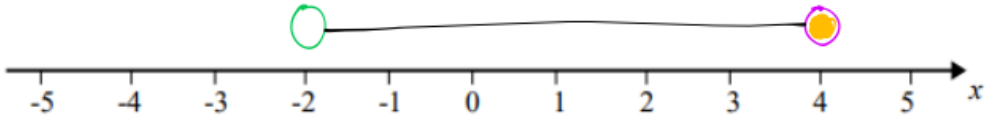
$(\frac{\sqrt{4}}{\sqrt{9}})^3 = \frac{2^3}{3^3} = \frac{8}{27}$

y = -4x - 8 Can be any number

Equation of a line that is parallel $y = -4x + 10$

Equation of a line that is perpendicular $y = \frac{1}{4}x + 10$

On the number line show the inequality $-2 < x \leq 4$



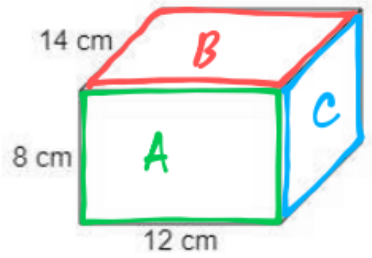
$-4 \leq 2y < 5$ where y is an integer.
Write down all the possible values of y.

$\frac{-4}{2} \leq y < \frac{5}{2}$ $-2 \leq y < 2.5$ $-2, -1, 0, 1, 2$

Solve $3x + 2 < x + 14$

$2x + 2 < 14$
$2x < 12$
$x < 6$

Calculate the surface area and volume of this cuboid.



$A = 8 \times 12 = 96$
$B = 14 \times 12 = 168$
$C = 8 \times 14 = 112$
$376 \times 2 = 752\ cm^2$

Surface Area $752\ cm^2$ **Volume** $14 \times 8 \times 12 = 1344\ cm^3$

Solutions by
Kenneth Stafford
MATHS TUTOR
ken@kennethstafford.co.uk

Simplify

$$\frac{x^2 + 7x - 30}{x^2 + x - 12} = \frac{(x + 10)(x - 3)}{(x + 4)(x - 3)} = \frac{x + 10}{x + 4}$$

Simplify

$$\frac{4}{3x} - \frac{7}{6x} = \frac{2 \times 4}{2 \times 3x} - \frac{7}{6x} = \frac{8}{6x} - \frac{7}{6x} = \frac{1}{6x}$$

Write 0.0000476 in standard form

4.76×10^{-5}

Write 2.11×10^6 as a normal number

2,110,000

Give your answer in standard form $(2.6 \times 10^4) + (3 \times 10^5)$

$$\begin{array}{r} 26,000 \\ 300,000 \\ \hline 326,000 \end{array}$$

3.26×10^5