
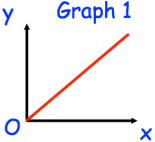
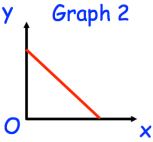
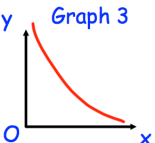
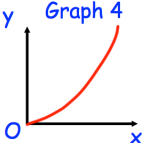
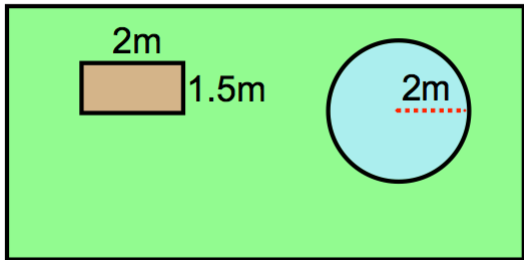


11th August		 Corbettmaths
<p>Make x the subject of</p> $\sqrt[3]{\frac{x}{k}} = w$	$\frac{x}{k} = w^3$ $x = kw^3$	
<div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <p>Graph 1</p>  </div> <div style="width: 50%;"> <p>Graph 2</p>  </div> <div style="width: 50%;"> <p>Graph 3</p>  </div> <div style="width: 50%;"> <p>Graph 4</p>  </div> </div>	<p>One of the graphs shows that y is inversely proportional to x.</p> <p>Which graph?</p> <p style="text-align: center; font-size: 2em;">3</p>	
<div style="text-align: center;"> <p>10m</p>  <p>6m</p> </div> <p>Belle wants to re-seed the grass in her garden. The garden is 10 metres long and 6 metres wide. There is a vegetable patch that is 2 metres long and 1.5 metres long.</p>	<p>There is a circular pond that has radius 2 metres. The remainder of the garden is grass. Each bag of grass seed costs £4.60 and covers 10m². Work out the total cost to re-seed the garden.</p>	
<p>The sum of Rosemary's age and Hannah's age is 102 years. The difference between their ages is 52 years. Hannah is younger than Rosemary. Find the age of each woman.</p> <p>Rosemary 77 Hannah 25</p>	$R + H = 102$ $R - H = 52$ <p>Add</p> $2R = 154$ $R = \frac{154}{2} = 77$ $H = 102 - 77 = 25$	

12th August

Corbettmaths

An internet company collected data about the number of internet devices in each of 50 households. The table shows the results.

Number of devices	Number of households
0	1
1	1
2	2
3	4
4	9
5	13
6	10
7	7
8	3

Work out the total number of internet devices in these 50 households

$$0 \times 1 + 1 \times 1 + 2 \times 2 + 3 \times 4 + 4 \times 9 + 5 \times 13 + 6 \times 10 + 7 \times 7 + 8 \times 3 = 251$$

Calculate the mean number of internet devices per household.

$$\text{mean} = \frac{251}{50} = 5.02$$

A hexagon-based pyramid has a height of 54cm.

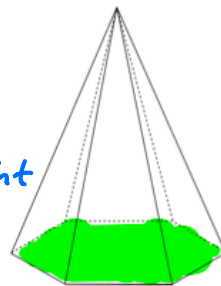
The volume of the pyramid is 1080cm^3 .

Calculate the area of the base of the pyramid.

$$\text{Vol} = \frac{1}{3} \text{base area} \times \text{height}$$

$$1080 = \frac{1}{3} \times \text{base area} \times 54$$

$$\frac{3 \times 1080}{54} = \text{base area} = 60\text{cm}^2$$



54cm

 60cm^2

7.8 has been truncated to one decimal place.

Write down an inequality to show the range of possible actual values.

$$7.8 \leq \text{Value} < 7.9$$

A line has gradient 3 and passes through the point (1, 8)

Find the equation of the line.


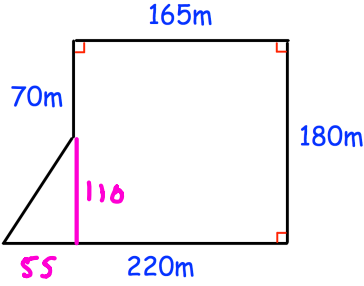
$$y = 3x + c$$



$$\text{Sub}(1, 8) \quad 8 = 3(1) + c$$


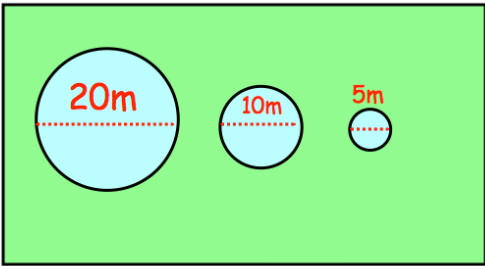
$$8 - 3 = c$$

$$5 = c$$

$$y = 3x + 5$$

<p>13th August</p> <p>Write 708% as a simplified fraction</p>	<p style="text-align: right;"> Corbettm0ths</p> $= 7.08$ $= \frac{708}{100}$ $= \frac{177}{25}$
 <p>Area = $165 \times 180 + \frac{1}{2} \times 55 \times 110$</p>	<p>Farmer Richards owns this field. The crop he plants earns him £7 for each square metre How much money does he earn in total?</p> <p>Area = 32725 m^2 Earns 32725×7 $= \text{£}229,075$</p>
<p>Solve</p> $x^2 + 5x - 14 = 0$ $(x + 7)(x - 2) = 0$ $x + 7 = 0 \quad \text{or} \quad x - 2 = 0$	$x = -7$ <p>or</p> $x = 2$
<p>$(a + c)^2 = t$</p> <p>make c the subject</p> $a + c = \pm\sqrt{t}$ $c = \pm\sqrt{t} - a$	
<p>Charlene and Danielle share some money in ratio 2 : 5 Danielle gets £216 more than Charlie.</p> <p>How much does each girl receive?</p> <p>$\text{£}216 = 3 \text{ shares}$ $216 \div 3 = 72 = 1 \text{ share}$</p>	<p>Charlene 2×72 $= \text{£}144$</p> <p>Danielle 5×72 $= \text{£}360$</p>

14th August		 Corbettmaths	
$ \begin{array}{ccc} & 2x + 1 & \\ 2.5 & \boxed{} & 3y - 2 \\ & 19 & \end{array} $	Find x	$ \begin{aligned} 2x + 1 &= 19 \\ 2x &= 19 - 1 \\ 2x &= 18 \\ x &= \frac{18}{2} \\ x &= 9 \end{aligned} $	
Find y	$ \begin{aligned} 3y - 2 &= 2.5 \\ 3y &= 2.5 + 2 \\ 3y &= 4.5 \\ y &= \frac{4.5}{3} \\ y &= 1.5 \end{aligned} $	Perimeter	$ \begin{aligned} 19 + 2.5 + 19 + 2.5 \\ = 43 \end{aligned} $
Solve	$ \begin{aligned} x^2 + 6x + 9 &= 0 \\ (x + 3)(x + 3) &= 0 \\ x &= -3 \end{aligned} $		
Expand and simplify	$ \begin{aligned} (5y - 1)(y - 2) \\ = 5y^2 - y - 10y + 2 \\ = 5y^2 - 11y + 2 \end{aligned} $		
<p>The speed limit on a road is 40mph. A scooter drives 9 miles in 13 minutes.</p> <p>Is the scooter breaking the speed limit?</p> 		<p>Distance per hour</p> $= 9 \times \frac{60}{13} = 41.5 \text{ miles}$ <p>so yes this exceeds 40 mph speed limit</p>	

15th August	
<p>The price (P, in £) of hiring a car is $P = 20d + 70$, where d is the number of days.</p> <p>Rearrange the formula to make d the subject</p>	<div style="text-align: right;">Corbettmaths </div> $P - 70 = 20d$ $\frac{P - 70}{20} = d$ $d = \frac{P - 70}{20}$
<p>Use your formula to find how many days a car was hired for if the final price is £370</p>	$d = \frac{370 - 70}{20}$ $d = \frac{300}{20}$ $d = 15 \text{ days}$
<p>Expand</p> <p>$(9 - 2x)(8 - x)$</p> $= 72 - 16x - 9x + 2x^2$	$= 72 - 25x + 2x^2$
<div style="text-align: center;">  <p style="text-align: center;">100m</p> </div> <p>A rectangular lawn is 100m long and 45m wide.</p> <p>There are 3 circular ponds, with radii 20m, 10m and 5m respectively.</p> <p>Mrs Jones wants to cover the lawn with grass seed.</p> <p>Each packet of grass seed covers 5m^2 and costs £3.49</p>	<p>How much will it cost Mrs Jones to cover the lawn with grass seed?</p> $\text{Area} = 45 \times 100$ $- \pi \times 10^2 - \pi \times 5^2 - \pi \times 2.5^2$ $= 4087.67\text{m}^2$ $\frac{4087.67}{5} = 817.53$ <p>so 818 packets</p> $818 \times \pounds 3.49$ $= \pounds 2854.82$

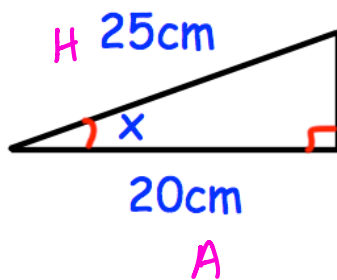
16th August

Corbettmaths

A farmer says he has 2,500 sheep, to the nearest 100.

What is the greatest possible number of sheep he has?

2549



Find x $\cos = \frac{A}{H}$

$$\cos x = \frac{20}{25}$$

$$x = \cos^{-1}\left(\frac{20}{25}\right) = 36.9^\circ$$

The bearing of A from B is 025°
Find the bearing of B from A.

$$25 + 180 = 205^\circ$$


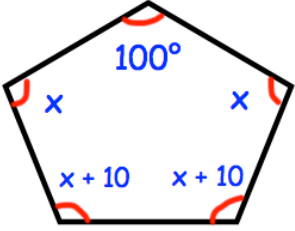
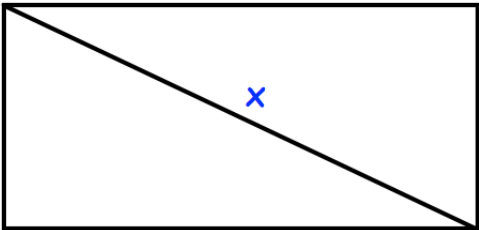
A car decreases in value 15% a year.


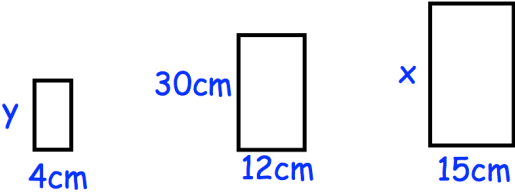
If it was bought for £5000, how much will it be worth after 2 years?


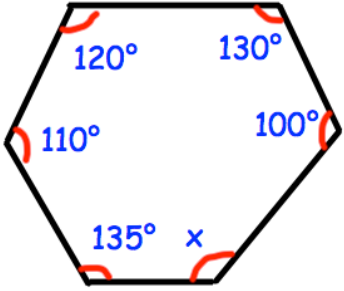
$$5000 \times 0.85^2 = \pounds 3612.50$$

A fair coin is flipped three times.
Write down the probability of getting three tails.

$$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{8}$$

17th August		 Corbettmaths
$\frac{99}{100}, \frac{97}{95}, \frac{95}{90}, \frac{93}{85}, \dots$ <p>Find the nth term</p> <p>numerator $101 - 2n$</p> <p>denominator $105 - 5n$</p>	$\text{nth term} = \frac{101 - 2n}{105 - 5n}$	
 <p>Angles add to $3 \times 180 = 540$</p>	<p>Find x</p> $4x + 120 = 540$ $4x = 540 - 120$ $4x = 420$ $x = \frac{420}{4}$ $x = 105$	
	<p>Find the length of the diagonal of the rectangle.</p> $x^2 = 7^2 + 20^2$ $x^2 = 449$ $x = \sqrt{449}$ $x = 21.2 \text{ to 3 s.f.}$	
<p>The mass of Earth is 5.97×10^{24}</p> <p>The mass of Jupiter is 1.898×10^{27}</p> $\frac{1.898 \times 10^{27}}{5.97 \times 10^{24}} = 317.92$	<p>Work out how many times heavier Jupiter is than Earth.</p> <p>Give your answer to one decimal place.</p> 317.9	
<p>A line has equation $y = -4x$</p> <p>Write down the gradient of the line</p> $\text{gradient} = -4$	<p>Write down the y-intercept of the line</p> $y\text{-intercept} = 0$	

18th August	
<p>Solve the inequality $2x - 1 < 9$</p> $2x < 9 + 1$ $2x < 10$ $x < \frac{10}{2}$	<p style="text-align: right;"> Corbettmaths</p> $x < 5$
<p style="text-align: right;">Not drawn accurately</p> 	<p>The diagram shows three similar rectangles.</p> <p>Work out the value of x.</p> $x = 30 \times \frac{15}{12} = 37.5 \text{ cm}$
<p>Work out the value of y.</p> $y = 30 \times \frac{4}{12}$ $y = 10 \text{ cm}$	
<p>Bank of Maths</p> <p>Double your money in 15 years.</p> <p>The average annual growth for your investment is 4.5%</p>	<p>Martyn has some money to invest and sees this advert.</p> <p>Will Martyn double his money in 15 years by investing his money with "Bank of Maths?"</p> $1 \times 1.045^{15} = 1.935$ <p>which is less than 2 so does not double</p>
<p>There are 6000 people at an ice hockey match.</p> <p>The announcer says this is exactly 40% more people than the previous match.</p> <p>Explain why the announcer is incorrect.</p>	$6000 \div 1.4 = 4285.714$ <p>Cannot have 0.714 of a person at previous match so 6000 cannot be 140% of previous attendance</p>

19th August	
<p>Ian truncates a number, y, to one decimal place.</p> <p>The result is 8.1.</p> <p>Write down the error interval for y</p>	<div style="text-align: right;">  Corbettmaths </div> $8.1 \leq \text{number} < 8.2$
	<p>Find x</p> <p>Angles add to $4 \times 180 = 720^\circ$</p> $x = 720 - (135 + 110 + 120 + 130 + 100)$ $= 720 - 595$ $x = 125^\circ$
<p>Solve the inequality $9x + 4 < 5x - 22$</p> $9x - 5x < -22 - 4$ $4x < -26$ $x < \frac{-26}{4}$	$x < -\frac{13}{2}$
<p>A rectangle has one side 4cm longer than the other. Write an expression for the area.</p>	$\text{Area} = x(x+4)$ <p>where x is the short side</p> <p>or $\text{Area} = x^2 + 4x$</p>
<p>Write down the equation of the line that is parallel to $y = 5x + 2$ and passes through $(0, 7)$</p> $y = 5x + c$ <p>Sub $(0, 7)$ $7 = 0 + c$</p>	$c = 7$ $\underline{y = 5x + 7}$

20th August



Corbettmaths

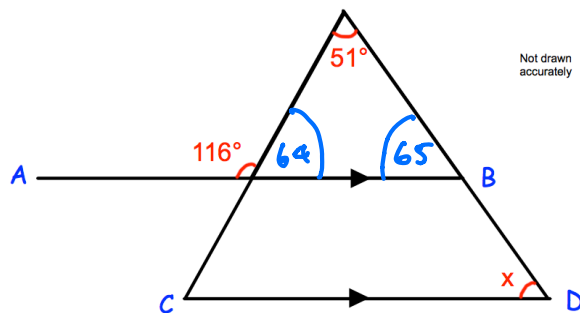
Use approximations to estimate the value of

$$\frac{4.12 \times 1.89}{0.21}$$

$$\frac{4 \times 2}{0.2}$$

$$= \frac{8}{0.2} = \frac{80}{2} = 40$$

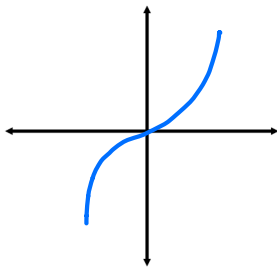
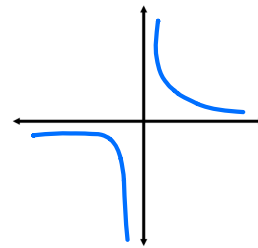
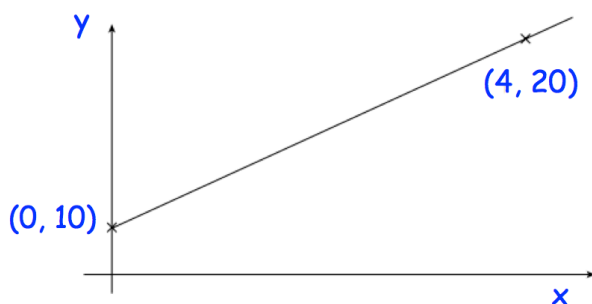
$$40$$

In the diagram, AB is parallel to CD.
Work out the size of angle x.

$$180 - (64 + 51) = 65$$

$$x = 65^\circ \text{ corresponding \u2265 equal}$$

$$x = 65^\circ$$

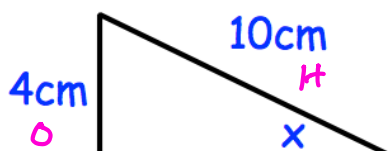
Sketch $y = x^3$ Sketch $y = \frac{1}{x}$ where $x \neq 0$ 

Find the equation of this line

$$\text{gradient } \frac{20-10}{4-0} = \frac{10}{4} = \frac{5}{2}$$

$$y = \frac{5}{2}x + 10$$

Shown is a right angled triangle.



Find angle x.

$$\sin = \frac{o}{H}$$

$$\sin x = \frac{4}{10}$$

$$x = \sin^{-1}\left(\frac{4}{10}\right) = 23.6^\circ$$