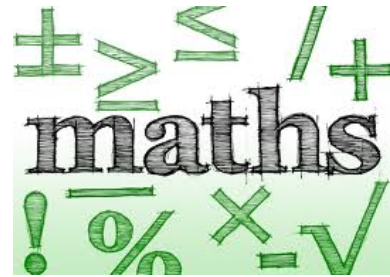


Maths GCSE to A level transition work summer 2017

Please bring your solutions to your first maths lesson. Don't worry if you get stuck; just give it your best attempt!

Solve $\frac{y}{2} - \frac{y-1}{3} = 2$

Make T the subject of the formula $W = \sqrt{\frac{3T+7}{2T}}$



The cost of sweets is £2 per kg. The cost of chocolate is £5 per kg.

Jim buys x kg of sweets and y kg of chocolate.

He buys at least 2 kg of sweets.

He buys at least 3 kg of chocolate.

He spends at most £20.

- Write down 3 inequalities in x and/or y .
- Draw a suitable graph and show, by shading, the region that satisfies all 3 inequalities.

Write $4x^2 + 24x$ in the form $a(x+p)^2 + q$. State the values of a , p and q .

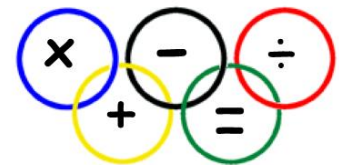
Show that any straight line that passes through the point (1, 2) must intersect the curve with equation $x^2 + y^2 = 16$ at two points.

June 2006

- Show that the equation $\frac{5}{x+2} = \frac{4-3x}{x-1}$ can be rearranged to give $3x^2 + 7x - 13 = 0$.
- Solve $3x^2 + 7x - 13 = 0$.
Give your solutions correct to 2 decimal places.

Solve these simultaneous equations.

a $2x + 3y = 10$	b $5x + 4y = 8$
$3x + 5y = 16$	$2x - 3y = -6$



$3 \times \sqrt{27} = 3^n$ Find the value of n .

Calculate $\frac{1}{\sqrt{2}+1} + \frac{1}{\sqrt{3}+\sqrt{2}} + \frac{1}{\sqrt{4}+\sqrt{3}} + \dots + \frac{1}{10+\sqrt{99}}$

Show that $25 - \frac{(x-8)^2}{4} = \frac{(2+x)(18-x)}{4}$

Prove that $(3n+1)^2 - (3n-1)^2$ is a multiple of 4, for all positive integer values of n .