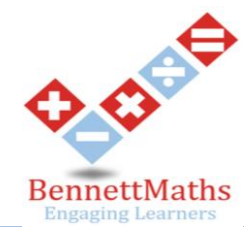|	**Questions**	**Maths Paper 1 - Higher**	
	Simplify (a) $p^4 \times p^3$ (b) $p^7 \div p^3$ (c) $\left(\frac{3}{4}\right)^{-2}$	The gradient of a radius of a circle is -3. The tangent to the circle passes through the point (6,2). Work out the equation of the tangent	Factorise (a) $x^2 - 8x + 16$ (b) $2x^2 - 5x - 3$
	Solve for x $$2^{4x} \times 4^8 = 8^4$$	Simplify: $$\sqrt{200}$$ Rationalise the denominator: $$\frac{4 + \sqrt{3}}{5 - \sqrt{2}}$$	Write down the value of: (a) $Sin(30)$ (b) $Cos(30)$ (c) $tan(45)$
	Work out $3\frac{2}{5} - \frac{4}{6}$ Work out $3\frac{2}{5} \div \frac{4}{6}$	Express 60 as a product of prime factors Find the HCF of 60 and 90	Make x the subject: $$y^2 = x^2 - 4as$$

Examples/ Key words	Maths Paper 1 - Higher	
Convert 3200 into standard form $3200 = 3.2 \times 10^3$ Work out $4.2 \times 10^4 + 8 \times 10^3$. Give your answer in standard form $42,000 + 8000 = 50,000$ $50,000 = 5 \times 10^4$	To simplify a surd – always find the largest square number that it can be divided by. E.g. $\sqrt{200} = \sqrt{100} \times \sqrt{2} = 10\sqrt{2}$	Estimate = make the question easier by rounding Evaluate = work out the answer Express = Write in the different way Simplify = Change the appearance
Volume of a cube = base x height x depth or length^3 Surface area of a cuboid = The sum of the area of the 3 pairs of congruent rectangles	The volume of a shape is 20cm^3. The mass of the shape is 120g. Find the density. Density = g:cm^3 $120:20$ $6:1$ Density = 6g/cm^3	Angles in regular polygons: Sum of the interior angles = $(n-2) \times 180$ To find an interior angle = $\frac{total}{n}$ n= number of angles/sides. Sum of the exterior angles = 360° To find an exterior angle = $\frac{360}{n}$ n= number of angles/sides
Gradient of a curve = draw tangent of the curve and find the gradient $$\frac{difference\ in\ y}{difference\ in\ x}$$	(see table below)	$x^{\frac{1}{3}} = \sqrt[3]{x}$ $x^{\frac{2}{3}} = (\sqrt[3]{x})^2$ $x^{-\frac{1}{3}} = \frac{1}{\sqrt[3]{x}}$ $x^{-4} = \frac{1}{x^4}$

	0°	30°	45°	60°	90°
Sin	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
Cos	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0
Tan	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	Undefined

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