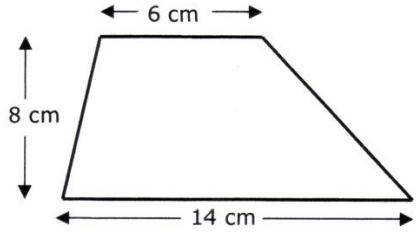
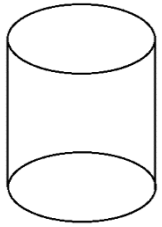
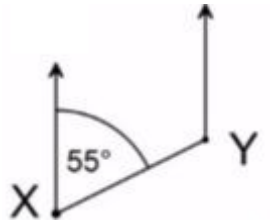
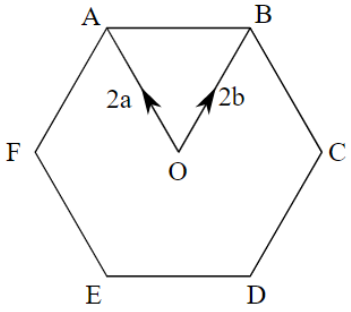
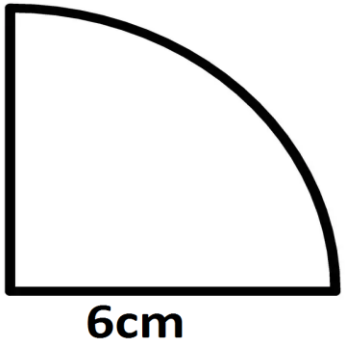
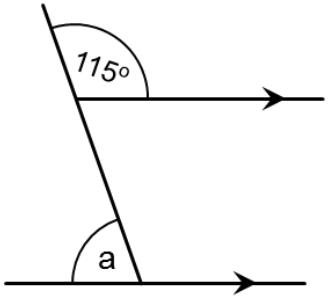
Non-Calculator Higher + GCSE Revision

Factorise $5x^2 + 20xy$.	Decrease £650 by 20%.	Expand and simplify $(x - 2)(x - 5)$.	Simplify $(5x^4 \times 3x^8)^2$.
Ben and Tyrell share some money in the ratio 2 : 3. Ben gets £15. How much does Tyrell get?	I scored 24 out of 40 on a test. What's that as a percentage?	Factorise $x^2 - 81$.	Lucy flips two fair coins. What's the probability she gets two tails?
500mm + 600cm + 2km Answer in metres.	Work out the interior angle of a regular octagon.	Write 180 as a product of prime factors.	It costs £150 to buy 9 games. How much does it cost to buy 12 games?

Multiply 2×10^5 by 7×10^8. Give your answer in standard form.	Solve $x^2 + 6x = 0$.	Find the value of $27^{\frac{1}{3}}$.	If a man walks 1.3km in 15 minutes, what is his average speed in km/h?
Find the length of the edge of a cube which has surface area $54cm^2$.	Solve $15 \leq 3 + 6x$ and show your answer on a number line.	Find the area of this trapezium. 	Find the volume of a cylinder with radius 4cm and height 10cm. Give an exact answer. 
Write 3 : 7.5 in the ratio 1 : n.	What's the lowest common multiple of 36 and 48?	What's the gradient of the straight line with equation $2y = 5 - 6x$?	

What's the bearing of X from Y?  	Find the value of $\left(\sqrt{8}+\sqrt{18}\right)^2$	ABCDEF is a regular hexagon centre O.  Express $\overrightarrow{FD}$ in terms of **a** and **b**.	Factorise $2x^2-7x-15.$
Find the perimeter of the quarter circle. Give an exact answer.  	Find angle a and give reasons.  		$f(x)=4x^2$ $g(x)=x+1$ Find $gf(-3)$.
		Find the value of a and b: $x^2+2x+8\equiv(x+a)^2+b$	Find the nth term of the sequence: $5, 18, 35, 56, 81, \ldots$

<table>
<tr>
<td>Rationalise and simplify
$\frac{4+\sqrt{2}}{\sqrt{8}}$.</td>
<td rowspan="2">Simplify
$\frac{x^2-16}{9x-6} \div \frac{x+4}{15x-10}$</td>
<td>Write down the equation of the circle with centre $(0,0)$ and radius 1.5.</td>
<td>Evaluate
$2cos60 - sin\,90 + 3tan45$.</td>
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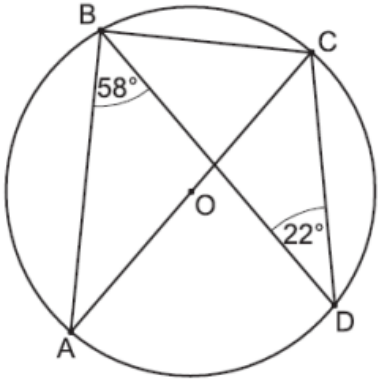
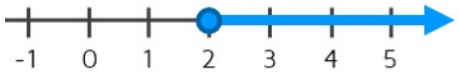
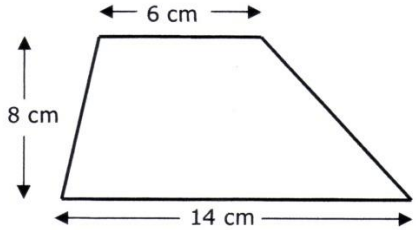
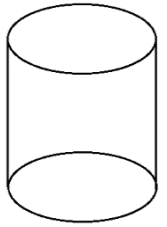
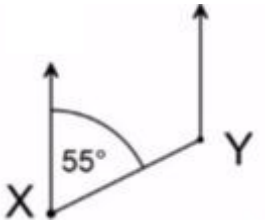
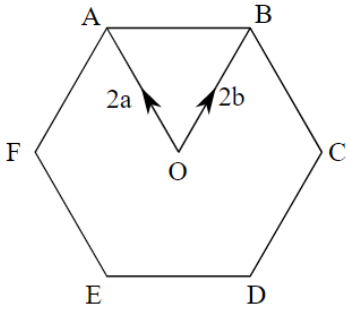
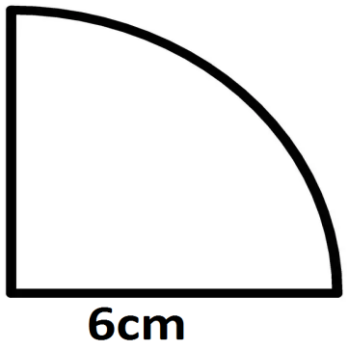
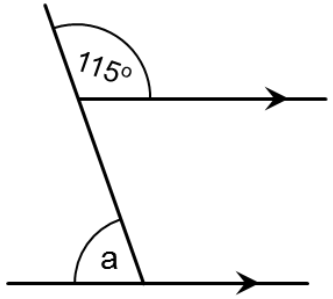
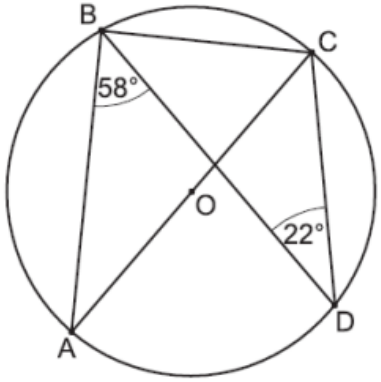
<td>Find the equation of the line perpendicular to $y = 2x + 7$ which goes through the point $(4,6)$.</td>
<td rowspan="2">Find angle ACB.
 
</td>
<td rowspan="2">Solve the simultaneous equations:
$y = x^2 - x - 6$
$y = 6 - 2x$</td>
</tr>
<tr>
<td>Write $\frac{1}{8} \times 32^{0.5}$ as a power of 2.</td>
</tr>
</table>

Non-Calculator Higher + GCSE Revision – ANSWERS

Factorise $5x^2 + 20xy$. $5x(x + 4y)$	Decrease £650 by 20%. £520	Expand and simplify $(x - 2)(x - 5)$. $x^2 - 7x + 10$	Simplify $(5x^4 \times 3x^8)^2$. $225x^{24}$
Ben and Tyrell share some money in the ratio 2 : 3. Ben gets £15. How much does Tyrell get? £22.50	I scored 24 out of 40 on a test. What's that as a percentage? 60%	Factorise $x^2 - 81$. $(x + 9)(x - 9)$	Lucy flips two fair coins. What's the probability she gets two tails? 0.25
500mm + 600cm + 2km Answer in metres. $2006.5m$	Work out the interior angle of a regular octagon. 135^0	Write 180 as a product of prime factors. $2^2 \times 3^2 \times 5$	It costs £150 to buy 9 games. How much does it cost to buy 12 games? £200

Multiply 2×10^5 by 7×10^8. Give your answer in standard form. 1.4×10^{14}	Solve $x^2 + 6x = 0$. $x = 0$ or $x = -6$	Find the value of $27^{\frac{1}{3}}$. 3	If a man walks 1.3km in 15 minutes, what is his average speed in km/h? $5.2km/h$
Find the length of the edge of a cube which has surface area $54cm^2$. $3cm$	Solve $15 \leq 3 + 6x$ and show your answer on a number line. $x \geq 2$ 	Find the area of this trapezium. $80cm^2$ 	Find the volume of a cylinder with radius 4cm and height 10cm. Give an exact answer. $160\pi\ cm^2$ 
Write 3 : 7.5 in the ratio 1 : n. $1: 2.5$	What's the lowest common multiple of 36 and 48? 144	What's the gradient of the straight line with equation $2y = 5 - 6x$? -3	

What's the bearing of X from Y? 235^o  	Find the value of $\left(\sqrt{8}+\sqrt{18}\right)^2$ 50	ABCDEF is a regular hexagon centre O.  Express $\overrightarrow{FD}$ in terms of **a** and **b**. $\mathbf{2b-4a}$	Factorise $2x^2-7x-15.$ $(2x+3)(x-5)$
Find the perimeter of the quarter circle. Give an exact answer.  $3\pi+12$	Find angle a and give reasons.  65^0 (straight line + corresponding or alternate)		$f(x)=4x^2$ $g(x)=x+1$ Find $gf(-3)$. 37
		Find the value of a and b: $x^2+2x+8\equiv(x+a)^2+b$ $a=1, b=7$	Find the nth term of the sequence: $5, 18, 35, 56, 81, \ldots$ $2n^2+7n-4$

Rationalise and simplify $\frac{4+\sqrt{2}}{\sqrt{8}}$. $\sqrt{2}+\frac{1}{2}$	Simplify $\frac{x^2-16}{9x-6} \div \frac{x+4}{15x-10}$ $\frac{5(x-4)}{3}$	Write down the equation of the circle with centre $(0,0)$ and radius 1.5. $x^2+y^2=\frac{9}{4}$	Evaluate $2cos60-sin\,90+3tan45$. 3
Find the equation of the line perpendicular to $y=2x+7$ which goes through the point $(4,6)$. $y=-\frac{1}{2}x+8$	Write $\frac{1}{8} \times 32^{0.5}$ as a power of 2. $2^{-\frac{1}{2}}$	Find angle ACB.  68^0	Solve the simultaneous equations: $y=x^2-x-6$ $y=6-2x$ $x=3, y=0$ $x=-4, y=14$