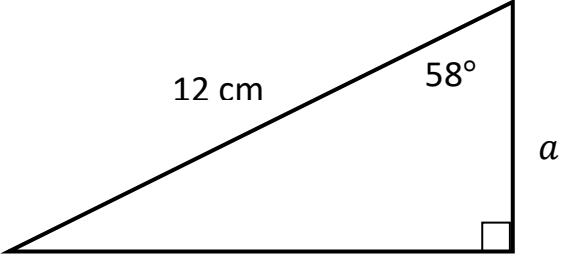
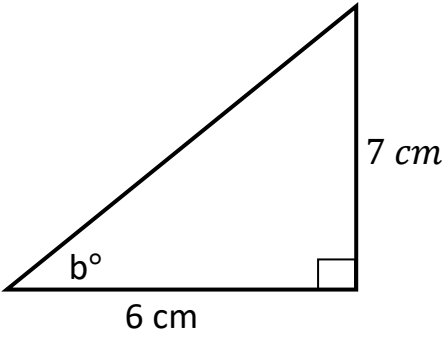
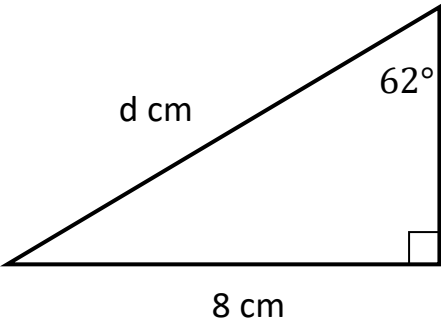
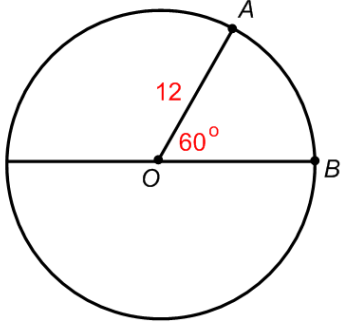
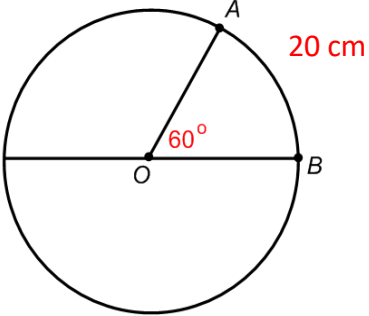


	S3 National 5 Revision – November Test 2	35
1	Simplify $\sqrt{2} \times \sqrt{32}$	2
2	Simplify $\sqrt{3} + \sqrt{12}$	2
3	Simplify $a^3 \times a^5 \times a^{-10}$ give your answer with positive indices	2
4	Simplify $\frac{20d^3}{5d}$	2
5	In cooking one fluid ounce is equal to 28.4 millilitres. How much is one fluid ounce equal to in litres? Give you answer in scientific notation	2
6	The surface area of the Earth is $5.1 \times 10^8 \text{ km}^2$ Approximately 70% of the Earth's surface is water. Calculate the surface area under water.	3
7	For the right-angled triangle shown, calculate the size of side a 	3
8	For the right-angled triangle shown, calculate the size of angle b 	3

9	 <p>For the right-angled triangle shown above calculate the size of the hypotenuse <math>d</math>.</p>	3
10	<p>Expand the brackets and simplify</p> $(x - 8)(x + 3)$	2
11	<p>Expand the brackets and simplify</p> $(x + 5)^2$	2
12	<p>Expand the brackets and simplify</p> $(2x + 1)(x^2 + 6x - 2)$	3
13	<p>For a sector with a centre angle of <math>60^\circ</math> and a radius of 12 cm.</p> <p>Find the length of Arc AB</p> 	3
14	 <p>For a sector with a centre angle of <math>60^\circ</math> and an arc length of 20 cm.</p> <p>Find the length of the radius for this circle</p>	3

	S3 National 5 Revision – November Test 2	35
1	$\sqrt{2} \times \sqrt{32} = \sqrt{64} = \mathbf{8}$ or $\sqrt{2} \times \sqrt{16}\sqrt{2} = \sqrt{2} \times 4\sqrt{2} = 2 \times 4 = \mathbf{8}$	2
2	$\sqrt{3} + \sqrt{12} = \sqrt{3} + \sqrt{4}\sqrt{3} = \sqrt{3} + 2\sqrt{3} = \mathbf{3\sqrt{3}}$	2
3	$a^3 \times a^5 \times a^{-10} = a^{3+5-10} = a^{-2} = \frac{\mathbf{1}}{a^2}$	2
4	$\frac{20d^3}{5d} = 4d^{3-1} = \mathbf{4d^2}$	1
5	$28.4 \div 1000 = 0.0284 = \mathbf{2.84 \times 10^{-2}}$	2
6	$\frac{70}{100} \times 5.1 \times 10^8 = 357000000 = \mathbf{3.57 \times 10^8}$	3
7	Using $\cos x = \frac{A}{H}$ , $\cos 58 = \frac{a}{12}$ , $a = 12 \times \cos 58 = \mathbf{6.4 \text{ cm}}$	3
8	Using $\tan x = \frac{O}{A}$ , $\tan b = \frac{7}{6}$ , $b = \tan^{-1}\left(\frac{7}{6}\right) = \mathbf{49^\circ}$	3
9	Using $\sin x = \frac{O}{H}$ , $\sin 62 = \frac{8}{d}$ , $d = \frac{8}{\sin 62} = \mathbf{9.06 \text{ cm}}$	3
10	$(x - 8)(x + 3) = x^2 + 3x - 8x - 24 = \mathbf{x^2 - 5x - 24}$	2
11	$(x + 5)^2 = (x + 5)(x + 5) = \mathbf{x^2 + 10x + 25}$	2
12	$(2x + 1)(x^2 + 6x - 2)$ $= 2x^3 + 12x^2 - 4x + x^2 + 6x - 2$ $\mathbf{2x^3 + 13x^2 + 2x - 2}$	3
13	$\text{Arc} = \frac{60}{360} \times \pi \times 24 = 12.56637 = \mathbf{12.6 \text{ cm}}$	2
14	$\text{Arc} = \frac{60}{360} \times \pi \times D$ , $20 = \frac{60}{360} \times \pi \times D$ , $D = \frac{20 \times 360}{60 \times \pi}$  $D = 38.2\text{cm}$ , <b>radius is 19.1 cm</b>	3