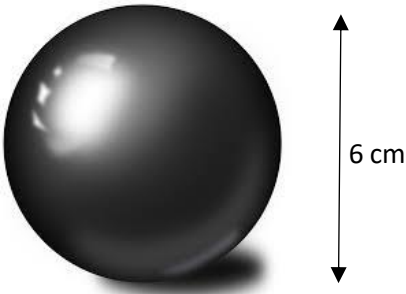


S3 Nat 5 Non-Calculator Revision - Paper B		30
1	Express $\sqrt{63} - \sqrt{7} + \sqrt{28}$ as a surd in its simplest form	3
2	Express in the simplest form (a) $\frac{c^9 d^2}{c^4 d^3}$ (b) $(5y^4)^2$	2 2
3	The diagram represents a sphere  <p>This sphere has a diameter of 6cm</p> <p>Calculate its volume using $\pi = 3.14$</p>	3
4	Multiply out the brackets and collect like terms $3x^2(7x + 15) - (x - 4)(x + 4)$	3
5	Factorise (a) $x^2 - 36$ (b) $x^2 + 3x - 70$	4
6	Write $x^2 - 6x + 10$ in the form $(x + a)^2 + b$	2
7	$E = mc^2$ Change the subject of the formula to c	2
8	A microwave is sold for £84. This price includes VAT at 20%. Calculate the price of the microwave before VAT	3
9	Evaluate $\frac{3}{8}$ of $\left(\frac{1}{3} + \frac{3}{7}\right)$	3
10	(a) Find the gradient between the points C (1, 7) and D (4,1)	1
	(b) Find the equation of a line with a gradient of 3 which passes through the point (2, 7)	2

Answers			
1	$\sqrt{63} = \sqrt{9\sqrt{7}} = 3\sqrt{7}$, $\sqrt{28} = \sqrt{4\sqrt{7}} = 2\sqrt{7}$, So $\sqrt{63} - \sqrt{7} + \sqrt{28} = 4\sqrt{7}$		
2	(c) $\frac{c^5}{d}$	(b) $25y^8$	
3	$V = \frac{4}{3}\pi r^3$, $V = \frac{4}{3}\pi 3^3$, $V = 36\pi$, $V = 113.04\text{cm}^3$		
4	$21x^3 + 45x^2 - (x^2 - 16) = 21x^3 + 44x^2 + 16$		
5	(a) $(x + 6)(x - 6)$	(b) $(x + 10)(x - 7)$	6 $(x - 3)^2 + 1$
7	$mc^2 = E$, $c^2 = \frac{E}{m}$, $c = \sqrt{\frac{E}{m}}$		
8	120% = £84, 60% = £42, 10% is £7, 100% is £70		
9	$\frac{3}{8} \text{ of } \left(\frac{1}{3} + \frac{3}{7}\right) = \frac{3}{8} \times \left(\frac{1}{3} + \frac{3}{7}\right) = \frac{3}{8} \times \frac{16}{21} = \frac{2}{7}$		
10	(c) The gradient $m = \frac{-6}{3} = -2$ (d) Substituting into $y = 3x + c \rightarrow 7 = 3(2) + c$, $c = 1$ $y = 3x + 1$		

Extra Help		
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2	Indices	Page 175 Q5,6, 7 & 8
3	Arcs and sectors	Page 128 Q1,2,3,4
4	Expanding brackets	Page 17 Q1
5	Factorising quadratics	Page 66 Q1 Page 67 Q2
6	Completing the square	Page 187 Q4
7	Changing the subject of a formula	Page 101 Q2
8	Percentages	Page 204 Q9
9	Fractions	Page 5 Q5
10	Straight lines	Page 51 Q9 Page 54 Q1 & 2