

Mathematics GCSE Non-Calculator: Paper 1 Mark Scheme

Question Number	Marking Guidelines	Additional Information
1.(a)	160;	
1.(b)	Attempt at long division; Obtains 4.57;	<b>Must</b> get as far as obtaining 4 for first mark. <b>Must</b> be to two decimal places for second mark.
2.	Diagram stem and leaves correct; Diagram ordered; Key included (eg. 1   2 = 12cm);	Mark independently.
3.	Correct substitutions ( $t$ must = 90); Obtain 60(J);	<b>Allow</b> one mark for answer of 1. (Obtained by using $t = 1.5$ )
4.	$\frac{2}{5} = \frac{4}{10}$ ;  $\frac{1}{3} = \frac{4}{12}$ ;  $\frac{7}{14} = \frac{1}{2}$ ;	One mark for each.  Additional lines between fractions negate one correct mark each.
5.(a)(i)	$3b - 7a$	Accept terms in either order.
5.(a)(ii)	$5a^2$ ;	
5.(b)	$4a - 6ab + 2b + 5ab$ ; $4a - ab + 2b$ ;	Correct expansion = 1 mark Correct simplification = 1 mark Accept terms in any order.
6.(a)	$4(p + 2)$ ;	
6.(b)	$(p \pm 5)(p \pm 2)$ ; $(p - 5)(p + 2)$ ;	First mark for obtaining 5 and 2 <u>and</u> using brackets correctly. Second mark for use of correct signs. Accept brackets in any order.
6.(c)	$(kp \pm a)(kp \mp a)$ ;  $(9p + 2)(9p - 2)$ ;	Demonstrates use of difference of two squares to obtain two bracketed terms. Signs in the two brackets must be opposite. Allow any positive value for <b>k</b> and <b>a</b> . Obtain fully correct factorisation.
7.(a)	$8\pi$ ;	Or equivalent (ie. $2 \times 4\pi$ )

<b>7.(b)</b>	Demonstrates use of $\pi r^2$ ; Obtains $\underline{16\pi}$ ; Divides <b>their</b> circle area by 2 (= $8\pi$ );	Give 3 <sup>rd</sup> marking point even if wrong area of circle divided by 2.
<b>8.(a)</b>	50%;	<b>Must</b> be percentage.
<b>8.(b)(i)</b>	$25\% / \frac{1}{4} / 0.25$ ;	Or equivalent (ie. 1 in 4).
<b>8.(b)(ii)</b>	$0.5 \times 0.5$ seen or implied; $25\% / \frac{1}{4} / 0.25$ ;	Or equivalent (ie. 1 in 4).
<b>8.(c)</b>	3 rounds;	
<b>9.(a)</b>	Obtain $\frac{2x^2}{2x^2 + 4x}$ ;  Factorise denominator to $2x(x + 2)$ ;	Blue over sum of all beads.
<b>9.(b)</b>	State $\frac{x}{(x+2)} = \frac{1}{3}$ OR $\frac{2x^2}{2x^2 + 4x} = \frac{1}{3}$ ;  $x = 1$ ;  And hence total beads = 6;	
<b>10.(a)(i)</b>	16;	
<b>10.(a)(ii)</b>	$6n - 5$ ;	
<b>10.(b)(i)</b>	$(3n + 1$ , Their answer to <b>(a)(ii)</b> )	
<b>10.(b)(ii)</b>	State or imply gradient as $\frac{\Delta y}{\Delta x}$ ; Obtain gradient as 2;  State $y = 2x - 7$ ;	