

Topic 4 Algebra 2 (Pre-TT) [39] MARKSCHEME

1.

$$3x + 6$$

B1

$$5x - 3x \text{ or } 6 + 1$$

M1

$$3.5 \quad 3\frac{1}{2} \text{ or } \frac{7}{2}$$

A1

Allow embedded answer
If contradiction M1A0

[3]

2.

(a) $4x > 10$ [M1]
 $x > \frac{5}{2}$ [A1] oe

(b) $-2x \leq 12$ or $-12 \leq 2x$ [M1]
 $x \geq -6$ [A1]

3.

$t = \frac{w - 11}{3}$	M1 For isolating term in t , eg. $3t = w - 11$ or dividing all terms by 3, eg. $\frac{w}{3} = \frac{3t}{3} + \frac{11}{3}$
	A1 for $t = \frac{w-11}{3}$ oe

4.

(a) $17 - x = 13.5$ M1
 $17 - 13.5 = x$ DM1
3.5 A1ft
ft on first M awarded and only 1 error.

$\frac{17}{3} - \frac{x}{3} = 4.5$ M1
 $x = 3 \times (5\frac{2}{3} - 4\frac{1}{2})$ DM1
oe

3.5 A1ft
ft on first M awarded and only 1 error.

(b) $2y - 6 = 5 - 3y$ M1
No errors

$2y + 3y = 5 + 6$ M1
Allow one error if first M1 awarded otherwise must be correct rearrangement.

2.2 A1
oe sc y = $\frac{8}{5}$ or 1.6 B2 from $2y - 3 = 5 - 3y$ only

(c) $6z - 3 + 4z + 12 = 10z - 5 + 12z - 4$ M1
Allow one error

$10z + 9 = 22z - 9$ A1ft
ft if one error and terms on each side collected correctly

1.5 A1ft

ft if M1, A0 awarded and no further errors made.

[9]

5.

$x = 21, y = 50$	P1	process to start solving problem eg. form an appropriate equation
	P1	complete process to isolate terms in x
	A1	for $x = 21$
	P1	complete process to find second variable
	A1	$y = 50$

6.

Expanding brackets: $20x - 15 \geq 60$ [M1] oe
 Rearranging: $20x \geq 75$
 $x \geq \frac{75}{20} = \frac{15}{4} = 3.75$ [M1] oe
 Smallest integer value is 4 [A1]

7.

69	4 1 AO1.3b 2 AO3.1d 1 AO3.3	M1 for $n - 6 + n + 3n = 109$ oe M1FT for $5n = 109 + 6$ A1 for $n = 23$	Allow equivalent part marks for use of different person as starting point Rearrangement of <i>their</i> equation to isolate n terms
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8.

$a = \frac{7-3r}{r-2}$	M1	Remove fraction and expand brackets
	M1	Isolate terms in a
	A1	

9.

$23 - 2x = 15$ M1
 $4.6 - 0.4x = 3$ gets M1 allow one error
 $23 - 15 = 2x$ A1
 $1.6 = 0.4x$ A1
 4 A1ft
f.t. if M1 awarded.

[3]

10.

$k = \sqrt[3]{4m^2 - 1}$ or $\sqrt[3]{(2m+1)(2m-1)}$	M1	clear fractions or remove sq rt sign
	M1	(dep) clear fractions and remove sq rt sign
	A1	$k = \sqrt[3]{4m^2 - 1}$ or $\sqrt[3]{(2m+1)(2m-1)}$