

Revision F3 (Topics 1-5) [41] MARKSCHEME

- 1.
- | | | | |
|-----|---|----|-----|
| (a) | $7x - 14y - 6x + 3y$ | M1 | |
| | <i>Allow one error</i> | | |
| | $x - 11y$ | A1 | |
| (b) | $24 - x = 15$ | M1 | |
| | <i>Allow $24 - x = 3 \times 5$</i> | | |
| | 9 | A1 | [4] |
- 2.
- | | | | |
|--|-----------|----|-----|
| | 180 - 144 | M1 | |
| | 36 | A1 | [2] |
- 3.
- | | | | |
|--|-----------------------------|----|-----|
| | $\frac{48}{400} \times 100$ | M1 | |
| | = 12% | A1 | [2] |
- 4.
- NB In all parts of this question. Penalise any further work (by 1 Accuracy mark) which contradicts a correct answer seen.**
- | | | | |
|--|---|----|-----|
| | (i) $a(2a + 1), (a + 0)(2a + 1)$ | B1 | |
| | (ii) $4xy^2(2x^2 - y)$ | B2 | |
| | <i>B1 for one error in factorising numbers, x or y,</i> | | [3] |
- 5.
- | | | | |
|-----|--|------|--|
| | (a) $6x$ | B1 | |
| (b) | (i) x^3 | B1 | |
| | (ii) y^7 | B1 | |
| (c) | $4x^2 + 20x - 3x - 15$ | M1 | |
| | <i>Expanding to give four terms one of which must be an x^2 term;
allow one error</i> | | |
| | <i>All four terms correct</i> | A1 | |
| | $4x^2 + 17x - 15$ | A1ft | |
| | <i>correct simplification of their expression if M1 awarded</i> | | |

Alternative:

Answer seen with no or partial working can award B1 for each correct term provided that there are 3 terms, one in x^2 , one in x and a constant term.
Use the scheme that gives most advantage to the candidate

[6]

6.

- (a) 40 B1
 Alternate B1
Do not accept: Z angle
Accept: Corresponding angle if corresponding angle seen.
Accept: Allied or interior if angle seen
- (b) 50 B1
 Opposite
Accept: Vertically opposite
Straight line (= 180) if 130 seen
- (c) 180-40-50 or 180 -40- their q M1
 oe
- 90 A1ft

[5]

7.

$$x^2 = \frac{1}{4} \pi r^2 \quad \text{M1}$$

$$r^2 = \frac{4x^2}{\pi} \quad \text{A1}$$

$$r = (\pm) \frac{2x}{\sqrt{\pi}} \quad \text{A1}$$

oe e.g. $\frac{2x}{1.77}$ or $\frac{x}{0.866}$ or $\frac{2\sqrt{\pi x}}{\pi}$

[3]

8.

- (a) 2×30 or 3×20 M1
First prime factor correct
- $= 2 (\times) 2 (\times) 3 (\times) 5$ A1
Condone $\times 1$
- $= 2^2 \times 3 \times 5$ A1
- (b) HCF is 8 B2
 $32 = 2^5 \quad 120 = 2^3 \times 3 \times 5$
B1 for HCF = 4

[5]

9.

(a)	36.4	P1 start process eg method to find area of trapezium P1 complete process to find volume of tank P1 process to find time eg volume $\times 1000 \div 300$ P1 process to find 85% of volume or of time A1 for 36.4 or 36 mins 24 secs
(b)		C1 explanation eg if the average rate was slower it would take more time, if the average rate was faster it would take less time

10.

66.9	P1 for process to find the area of one shape, eg. $19 \times 16 (= 304)$ or $\pi \times 8^2 (= 201.06\dots)$ P1 for process to find the shaded area, eg. "304" - "201.06" $\div 2 (= 203.46\dots)$ P1 for a complete process to find required percentage, eg. $\frac{203.46}{304} \times 100$ A1 for answer in range 66 to 68
------	--