Mock Revision (F3 only) [43] MARKSCHEME

1. Correct substitution: $27 = \frac{4(x+10)}{2}$ [M1]

Correct method: $54 = 4x + 40$ or $27 = 2x + 20$ [M1] oe

$4x = 14$ or $2x = 7$

$x = 3.5$ [A1]

2.

(a) 3y – 12 B1

(b) 6d – 2c B2

B1 for –2c

(c) 32° M1,A1,A1

M1 for 2x + x + 84 = 180
A1 for 3x = 96
A1 cao

[6]

3.

(a) Any one correct mid-point seen and used
ie 17.5, 22.5, 27.5, 35 or 50 M1

Used in fx (not just added)
ie 70, 225, 165, ...
** Look out for 17, 23, 27 used (35, 50) leading to correct answer ⇒ M3A0*

Σfx M1

fx for their x in class or on boundary, at least 2 products summed

1630 ÷ 50 M1 dep

Dep on 2nd M1
"Their" Σfx divided by "their" 50

= 32.6 A1

Accept 32 or 33 from fully correct method

(b) Median is 25th or 25.5th or 26th value M1

Attempt to locate middle

30 ≤ × <40 A1

From fully correct method

[6]

4.

(a) 4(x – 2) B1

(b) y(....) M1

y(y + 2) A1

[3]

5.

£90 = 117.5% M1

$\frac{100}{117.5} \times 90$

(VAT =) £90 × 0.175 ÷ 1.175 M1

= £13.40 A1

SC2 for £76.60

[3]

6.

$360 \div 8$		M1
	or 45 seen or 6 × 180 or 1080 or (2 × 8 – 4) right angles	
180 – (their 45)		M1 dep
	(their 1080) ÷ 8	
135		A1
	135	

[3]

7.

322.26	**4** 3 AO1.3b 1 AO3.3	**B3** for 2722.26 to 2722.263 OR **M2** for 2400×1.032^4 OR **M1** for 2476.8[0] or 1.032 **soi** **M1** for *their* 2476.8 × 1.032 and *their* 2556.05 to 2556.06 × 1.032 and *their* 2637.85 to 2637.86 × 1.032	Steps towards first year calculated Further 3 years calculated

8.

(a) $BC^2 = 19^2 - 9^2 (=280)$ M1

$x^2 + 9^2 = 19^2$

$BC = \sqrt{280}$ DM1

For squaring, subtracting and evidence of square rooting

BC = 17 or 16.7(....) A1

17 with no working gets 3

(b) Sight of tangent M1

$\tan x = 11/24$ or DM1

Angle = $\tan^{-1}(1 \div 24)$

$\tan^{-1}(0.458)$

M2 for any complete correct method

Sin = 11/√697 or 11/26.4

Cos = 24/√697 or 24/26.4

25 or 24.6(....) A1

25 with no working gets 3

Radians 0.43 gradians 27.35

Penalise on first occurrence only.

[6]

9.

Expanding brackets:	$20 - 28x < -36$	[M1] oe
Rearranging:	$-28x < -56$	
	$x > 2$	[M1] oe
	Smallest integer value is 3	[A1]

10.

New price (each dress) = 0.7 of old dress or 1.6 of old price — B1

If 100 dresses at £100
B1 for 160 dresses or £70

New takings = 1.6 × 0.7 of old takings — M1

M1 for 160 × 70 etc

= 1.12 of old takings — A1

12% increase — A1

SCI 70 and 160

[4]

11.

(a)		$y = 5x - 7$	**2** 1 AO1.2 1 AO2.1a	**B1** for $y = 5x + k$ ($k \neq 3$) or $y = kx - 7$ or $5x - 7$
(b)		$y = 6x + 1$	**3** 2 AO1.3b 1 AO2.3b	**M1** for $\frac{1 - \text{`}17}{0 - \text{`}3}$ **oe** **B1** for $y =$ *their* $6x + k$ ($k \neq 1$) or $y = kx + 1$ or *their* $6x + 1$