PRACTICE PAPERS

Rewarding Learning

General Certificate of Secondary Education
2020

Mathematics

Unit **M2**

(With calculator)

Foundation Tier

PRACTICE

MARK

SCHEME

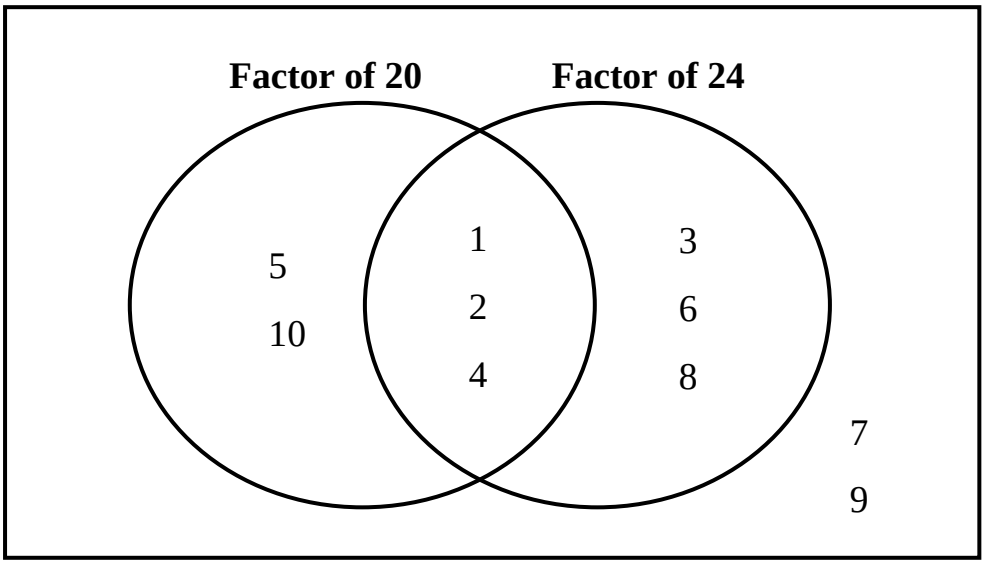
1 **(a)** 90° A1

(b) 180° – 70° = 110° MA1

110° ÷ 2 = 55° MA1

(c) 55° + 90° = 145° MA1

2



All 4 regions correct A3
Any 3 regions correct A2
Any 2 regions correct A1

3 **(a)** 25 A1

(b) 30 A1

(c) **(i)** 6 | 0 A1

(ii) 32 A1

4 290 + 4.50 = 294.50 MA1

235 × 0.20 = 47 MA1

235 + 47 = 282 MA1

Shop by £12.50 A1

5	**(a)**	$16 - (-8) = 24$	M1 A1
	(b)	total = 12	A1
		$12 \div 6 = 2$	M1 A1
6		$40 \times 8\frac{1}{4} = 330$ km	M1 A1
7	**(a)**	$\frac{x}{3} = 6$	MA1
		$x = 18$	MA1
	(b)	$4(2e - 3)$	A1
	(c)	$T = 3^2 - 2 \times 10$	MA1
		$T = 9 - 20$	
		$T = -11$	A1
8	**(a)**	FALSE	A1
	(b)	TRUE	A1
	(c)	FALSE	A1
	(d)	TRUE	A1
	(e)	TRUE	A1
	(f)	FALSE	A1

9 $24 \times 28 = 672$ MA1

$\frac{55}{672} \times 100\% = 8.1845\ldots\%$ MA1

8.2 A1

10 $0.10 \times 18 = 1.80$ MA1

$18 - 1.80 = £16.20$ MA1

$0.30 \times 43 = 12.90$

$43 - 12.90 = £30.10$ MA1

$2 \times 16.20 + 30.10 = £62.50$ A1

11 $8 \times 8 \times 8 = 16 \times 8 \times h$

$h = 4$ cm MA1

cube $64 \times 6 = 384$ MA1

cuboid $128 + 128 + 32 + 32 + 64 + 64 = 448$ MA2

cube by 64 cm^2 A1

12

	girls	**boys**	**Total**
glasses	128	64	192
not glasses	256	192	448
	384	256	640

A4

13 $24 + 24 + 9 + 9 = 66$ M1 A1

14	$0.15 \times 120 = 18$	MA1
	$120 \div 8 \times 3 = 45$	MA1
	$120 - (18 + 45) = 57$	MA1
	$19 \times 0.35 = £6.65$	MA1
15	$105 + 4 \times 55 = 325$	MA1
	$379 - 325 = 54$	MA1
	$54 \div 18 = 3$	MA1
16	Evidence of $\times 3$	MA1
	Angles correct in the table 81°, 120°, 102°, 42°, 15°	MA1
	2 or 3 correct sectors drawn	MA1
	All sectors correct and labelled	A1
17	$\frac{90}{240} \times 100\% = 37.5\%$	MA2
18	$5 \times 73 - (70 + 82 + 65 + 90) = 58$	MA2
	$90 - 58 = 32$	MA1
19	$600 = 2 \times 2 \times 2 \times 3 \times 5 \times 5$	M1 A1
	$2^3 \times 3 \times 5^2$	A1

20 **(a)** factors of 48 = 1, 48, 2, 24, 3, 16, 4, 12, 6, 8

factors of 72 = 1,72, 2, 36, 3, 24, 4, 18, 6, 12, 8, 9 MA1

HCF = 24 A1

(b) multiples of 35

=35, 70, 105, 140, 175, 210, 245, 280

multiples of 40

=40, 80, 120, 160, 200, 240, 280 MA1

LCM = 280 A1

21 **(a)** $4(x + 5)$ **or** $4x + 20$ A1

(b) $3(2x – 1)$ **or** $6x – 3$ A1

(c) $3(2x – 1) = 4(x + 5)$ **or** $6x – 3 = 4x + 20$ A1

$6x – 4x = 20 + 3$ MA1

$2x = 23$ A1

$x = 11.5$ A1

(d) $(11.5 + 5 + 4) \times 2$ MA1

$= 41$ A1

22 $C = \pi d$, $C = \pi \times 60 = 188.495559….$ MA2

Perimeter = 188.495559 + 100 + 100

= 388.495559… MA1

5000 ÷ 388.495559 = 12.87

13 laps A1

23 **(a)** $16 \times 2.5 + 13 \times 7.5 + 3 \times 15 + 8 \times 25$

$= 382.5$ MA2

$382.5 \div 40 = 9.5625$ MA1, A1

(b) The manager only collects data for 1 hour.
He should spend more time collecting the data
He only collects data on a Tuesday morning between 9am and 10am. He should sample data other times during the day and/or week. A2

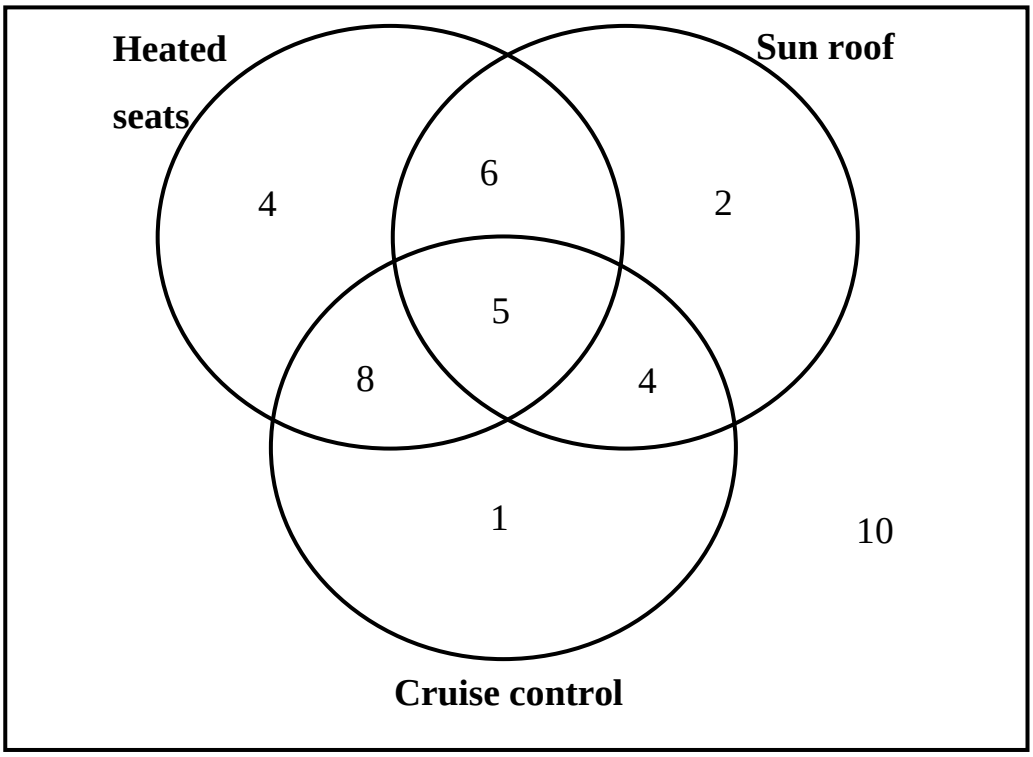
24 $x^2 = 30^2 + 45^2$ MA1

$x^2 = 2925$ MA1

$x = 54.08$ A1

total = 30 + 45 + 54.08 = 129 .08 A1

25



All 8 regions correct	A4
Any 7 regions correct	A3
Any 6 regions correct	A2
Any 3 regions correct	A1