

# Gold Level

## Mark Scheme 10

Level	IGCSE
Subject	Maths
Exam Board	Edexcel
Difficulty Level	Gold
Booklet	Mark Scheme 10

**Time Allowed:** 56 minutes

**Score:** /46

**Percentage:** /100

**Grade Boundaries:**

A*	A	B	C	D	E	U
>85%	75%	60%	45%	35%	25%	<25%

Question Number	Working	Answer	Mark	Notes
1 (a) (i)	$2^3 - 6 \times 2^2 + 20$		2	B1 must see $8 - 24 + 20$ oe $x$
(ii)	13, (20), (15), 4, (-7), (-12), -5, (20)			B1 for all correct
(b)	Points plotted Curve		1 1	B1 ft $\pm \frac{1}{2}$ square B1 ft if at least B1 scored in (a)
(c) (i)		$3x^2 - 12x$	2	M1 for $3x^2$ or $12x$ A1
(ii)	$3 \times (-3)^2 - 12 \times (-3)$	63	2	M1 ft for a quadratic in c) i) A1
				<b>Total 8 marks</b>

2	20 or 160   360 $\div$ "20" or 720 $\div$ "40"		4   18	M1 for $(140 + x) + x = 180$ oe or $y + (y - 140) = 180$ or $\frac{180(n-2)}{n} - 140 = \frac{360}{n}$ A1 $x = 20$ or $y = 160$ or $180n - 140n = 720$ M1dep on previous M1 A1
				<b>Total 4 marks</b>

3 (a)		Pacific	1	B1
(b)	$(7.68 \times 10^7) + (6.86 \times 10^7) + (1.56 \times 10^8) + (2.03 \times 10^7) + (1.41 \times 10^7)$	$3.358 \times 10^8$	2	M1 oe or digits 3358 or 336 A1 accept $3.36 \times 10^8$
(c)	$((3.358 \times 10^8) \div (5.1 \times 10^8)) \times 100$	65.8	2	M1 ft oe A1 awrt 65.8
				<b>Total 5 marks</b>

4	(a)	$P = "k" / r^2$ $22.5 = "k" / 2^2$				M1 $k \neq 1$ M1 $k \neq 1$ A1
	(b)		$P = 90 / r^2$	3	1	B1 ft from " $k$ " $\div 1.5^2$ $k \neq 1$
	(c)	$10 = "k" / r^2$ ( $r =$ ) $\sqrt{("k" / 10)}$		3	2	M1 $k \neq 1$ A1 ft ignore $\pm$
<b>Total 6 marks</b>						

5	(a)			1	1	B1
	(b)	$y = (x - 6) / 2$ $2y = - 6$ $2y + 6 =$		$2 + 6$	2	M1 or for a correct flowchart including inverse A1 $= (y - 6) / 2$ $2 = y - 6$
	(c)		$(x) < 4$		2	B2 B1 for $(x) \leq 4$
	(d)	$\sqrt{\frac{x-6}{2}} - 4$	$\sqrt{\frac{x-14}{2}}$		2	M1 A1 accept $\sqrt{\frac{x}{2}} - 7$ condone $\pm$
<b>Total 7 marks</b>						

6		$(0.5 \times 160), (2 \times 50), (1 \times 25)$ $80 + 100 + 25$			3	M1 for any two or a clear indication that 1 car = 1 small sq or 25 cars = 1 cm <sup>2</sup> M1 or 8.2 x 25 oe A1
<b>Total 3 marks</b>						

7	(a) (i)		6	1	B1
	(ii)		Tangents from a point to a circle are equal in length	1	B1 oe
	(b)	$RT$ (or $RU$ ) = 8 $15^2 = 13^2 + 14^2 - 2 \times 13 \times 14 \cos(PQR)$ $\cos(PQR) = (13^2 + 14^2 - 15^2) \div (2 \times 13 \times 14)$	67.4	4	B1 or $QR = 14$ M1ft Allow ft for $QR$ and $PR$ if lengths stated or marked on diagram M1ft A1 awrt 67.4
<b>Total 6 marks</b>					

8	(i)		$-a - b + c$	1	B1 any order
	(ii)	$PX = PU + UT + \frac{1}{2} TQ$ oe	$\frac{1}{2}(a + b + c)$	2	M1ft any valid route in capitals or lower case A1 accept $\frac{1}{2}a + \frac{1}{2}b + \frac{1}{2}c$
<b>Total 3 marks</b>					

9		$3.5^2 + 10^2 (=112.25)$ or $6^2 + 3.5^2 + 10^2 (=148.25)$ $\sqrt{112.25}$ (=10.59..) or $\sqrt{148.25}$ (=12.17..)		4	M1 M1 awrt 10.6 or 12.17 M1(dep on M1M1) A1 awrt 29.5
<b>Total 4 marks</b>					