

Marking Scheme

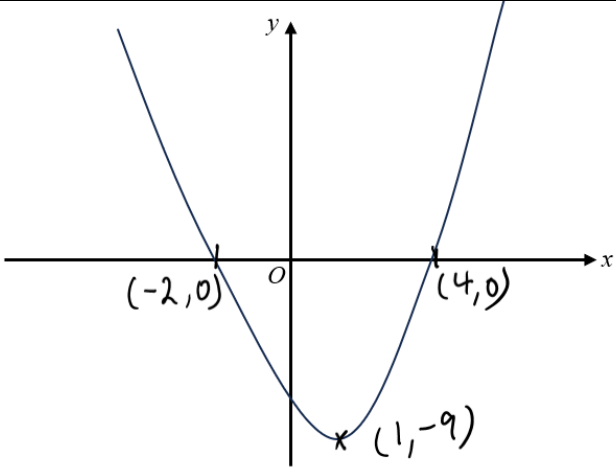
1		[B1]
2	$-8x - 9 = 6$ $-8x = 15$ $x = -\frac{15}{8}$ or $-1\frac{7}{8}$ or -1.875	[B1; no mark for -1.88]
3	$2410\left(1 + \frac{r}{100}\right)^6 = 2660$ $\left(1 + \frac{r}{100}\right)^6 = \frac{2660}{2410}$ $1 + \frac{r}{100} = \left(\frac{2660}{2410}\right)^{\frac{1}{6}}$ $\frac{r}{100} = \left(\frac{2660}{2410}\right)^{\frac{1}{6}} - 1$ $r = 100 \times \left[\left(\frac{2660}{2410}\right)^{\frac{1}{6}} - 1\right]$ $r = 100 \times \left[\left(\frac{2660}{2410}\right)^{\frac{1}{6}} - 1\right]$ $= 1.66$ (3 s.f.)	[M1] [A1]
4(a)	0.0050500 (5 s.f.)	[B1]
4(b)	5.0500×10^{-3}	[B1; accept 5.05×10^{-3} and allow for ecf]
5	$600 = 2^3 \times 3 \times 5^2$ For the base area to be a square, possible dimensions are $2 \times 2 \times 150$, $5 \times 5 \times 24$ or $(2 \times 5) \times (2 \times 5) \times 6$. Smallest possible height is 6 cm.	[M1] [A1]

10	$\frac{4x^2 + 19x - 30}{32x^3 - 50x}$ $= \frac{(4x-5)(x+6)}{2x(4x-5)(4x+5)} \text{ or } \frac{(4x-5)(x+6)}{x(4x-5)(8x+10)}$ $= \frac{x+6}{2x(4x+5)}$	[B1: for numerator] [B1: for denominator] [B1]
11	$\frac{x-3}{3} - \frac{1-x^2}{2-3x} = 1$ $(x-3)(2-3x) - 3(1-x^2) = 3(2-3x)$ $2x - 3x^2 - 6 + 9x - 3 + 3x^2 = 6 - 9x$ $11x - 9 = 6 - 9x$ $20x = 15$ $x = \frac{3}{4} \text{ or } 0.75$	[M1: removing denominator] [M1: expand $(x-3)(2-3x)$ correctly] [A1]
12	Each interior angle of pentagon $= \frac{(5-2) \times 180}{5}$ $= 108^\circ$ Each interior angle of octagon $= \frac{(8-2) \times 180}{8}$ $= 135^\circ$ Sum of angles of a , b and c $= (360 - 108) + 2(360 - 108 - 135)$ $= 486^\circ$	[M1] [M1] [A1]

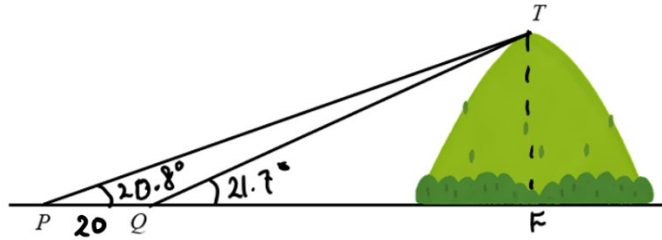
13	$d = kt^2$ $320 = k(8)^2$ $k = \frac{320}{64}$ $k = 5$ $80 = 5t^2$ $t^2 = \frac{80}{5} = 16$ $t = \pm\sqrt{16} = 4 \text{ or } -4 \text{ (N.A.)}$ $t = 4$	[M1] [A1]
14	Let the amount of money shared by \$x. Amy's original share: $\frac{2}{9}x$ Amy's final share: $\frac{3}{4}\left(\frac{2}{9}x\right) = \frac{1}{6}x$ Amy's transferred share: $\frac{1}{4}\left(\frac{2}{9}x\right) = \frac{1}{18}x$ Ben's original share: $\frac{3}{9}x = \frac{1}{3}x$ Ben's final share: $\frac{2}{3}\left(\frac{1}{3}x + \frac{1}{18}x\right) = \frac{7}{27}x$ Ben's transferred share: $\frac{1}{3}\left(\frac{1}{3}x + \frac{1}{18}x\right) = \frac{7}{54}x$ Cal's original share: $\frac{4}{9}x$ Cal's final share: $\frac{4}{9}x + \frac{7}{54}x = \frac{31}{54}x$ Final ratio $= \frac{1}{6}x : \frac{7}{27}x : \frac{31}{54}x$ $= 9 : 14 : 31$	[M1] [M1] [A1]

15(a)	$15 \times 5.8 = 5 \times 14.4 + 10x$ $10x = 15$ $x = 1.5$	[M1] [A1]
15(b)	<u>Median</u> would be more appropriate because the <u>mean</u> would be affected by the outlier of 50 points. The player who scored 50 points contributed about 69% of all points scored by starting players.	[B1: must mention outlier of 50 points. Accept any reasonable response]
16(a)	$AC = 2a$ $BD = 2d$ Area of rhombus $= \frac{1}{2}(2a \times 2d)$ $= 2ad$	[B1]
16(b)	Area of triangle PQS $= \frac{1}{2}(x \times 2y)$ $= xy$ $MR = 3x$ Area of triangle RQS $= \frac{1}{2}(3x \times 2y)$ $= 3xy$ Area of kite $= xy + 3xy$ $= 4xy$	[M1] [A1]

17(a)	$\left(\frac{625x^4}{y^8}\right)^{-\frac{1}{4}}$ $= \frac{1}{5}x^{-1}$ $= \frac{1}{5y^{-2}}$ $= \frac{y^2}{5x}$	[M1: for either $\frac{1}{5}$, x^{-1}, y^{-2}] [A1]
17(b)	$243^a = 3^8 + 3^8 + 3^8$ $3^{5a} = 3^8(1+1+1)$ $3^{5a} = 3^8(3)$ $3^{5a} = 3^9$ By comparing indices, $5a = 9$ $a = \frac{9}{5} \text{ or } 1\frac{4}{5} \text{ or } 1.8$	[M1: for getting 3^{5a} or 3^9] [A1]
18(a)	When $x \neq h$, $(x-h)^2 > 0$ and $y = (x-h)^2 + k > k$. When $x = h$, $(x-h)^2 = 0$ and $y = (x-h)^2 + k = k$. (Or mention that coeff of x^2 is positive) So, y has its minimum value of k when $x = h$.	[B1: for highlighted part]
18(b)	Since the graph of $y = (x-h)^2 + k$ is symmetrical about the vertical line passing through its minimum point, $h = \frac{-2+4}{2}$ $h = 1 \text{ (shown)}$	[B1]
18(c)	Sub $x = 4$, $y = 0$, $h = 1$, $0 = (4-1)^2 + k$ $k = -9$ Min. value of y is -9.	[B1]

18(d)		[C1: correct shape] [P1: correct coordinates for x-intercepts and min pt; <u>must be coordinates</u>]
19(a)	When $n = 1$, $\frac{3}{2}(1)(1-3) = -3$ So, $T_1 = -3$ When $n = 2$, $\frac{3}{2}(2)(2-3) = -3$ So, $T_1 + T_2 = -3$ $-3 + T_2 = -3$ $T_2 = 0$ When $n = 3$, $\frac{3}{2}(3)(3-3) = 0$ So, $T_1 + T_2 + T_3 = 0$ $-3 + 0 + T_3 = 0$ $T_3 = 3$ First 3 terms: $-3, 0, 3$	[B1: one correct term] [B1: all terms correct]
19(b)	$T_1 = -3$ Common difference = 3 $T_n = -6 + 3n$	[B1]
19(c)	Since $T_n = -6 + 3n = 3(n-2)$, each term in the sequence is a multiple of 3.	[B1: must show factorization]

20	$\angle CDA = 180^\circ - 119^\circ$ ($\angle$ s in opp. segments) $= 61^\circ$ $\angle OAT = 90^\circ$ (tan $\perp$ rad) $\angle OAD = 29^\circ$ (base $\angle$ s of isos. Δ) So, $\angle DAT = 90^\circ - 29^\circ$ $= 61^\circ$ Since $\angle CDA = \angle DAT$, they are <u>alternate angles</u> and lines CD and ST are parallel	[B1: with reason] [B1: with reason for tan $\perp$ rad] [A1]
21(ai)	$A' \cap B' = \{0, 4, 6, 8, 10\}$	[B1]
21(aii)		[B1]
21(bi)	12, 16	[B1: do not accept {12, 16}]
21(bii)	$P = \{16\}$ $Q = \phi$ $R = \{12, 16\}$ So, $(P \cup Q) \cap R' = \phi$ $\therefore n[(P \cup Q) \cap R'] = 0$	[B1]

**Method 1**

Let distance QF be x m.

$$\tan 20.8^\circ = \frac{TF}{20 + x}$$

[M1]

$$(20 + x) \tan 20.8^\circ = TF$$

$$x = \frac{TF - 20 \tan 20.8^\circ}{\tan 20.8^\circ}$$

$$\tan 21.7^\circ = \frac{TF}{x}$$

[M1]

$$x = \frac{TF}{\tan 21.7^\circ}$$

$$\text{So, } \frac{TF - 20 \tan 20.8^\circ}{\tan 20.8^\circ} = \frac{TF}{\tan 21.7^\circ}$$

[M1]

$$TF \tan 21.7^\circ - 20 \tan 20.8^\circ \tan 21.7^\circ = TF \tan 20.8^\circ$$

$$TF \tan 21.7^\circ - TF \tan 20.8^\circ = 20 \tan 20.8^\circ \tan 21.7^\circ$$

$$TF (\tan 21.7^\circ - \tan 20.8^\circ) = 20 \tan 20.8^\circ \tan 21.7^\circ$$

$$TF = \frac{20 \tan 20.8^\circ \tan 21.7^\circ}{\tan 21.7^\circ - \tan 20.8^\circ}$$

$$= 167 \text{ m (3 s.f.)}$$

[A1]

Method 2:

$$\angle PQT = 180^\circ - 21.7^\circ \text{ (adj } \angle \text{s on a st. line)}$$

$$= 158.3^\circ$$

$$\angle PTQ = 180^\circ - 158.3^\circ - 20.8^\circ \text{ (}\angle \text{sum of } \Delta \text{)}$$

$$= 0.9^\circ$$

By Sine Rule,

$$\frac{PT}{\sin 158.3^\circ} = \frac{20}{\sin 0.9^\circ}$$

[M1]

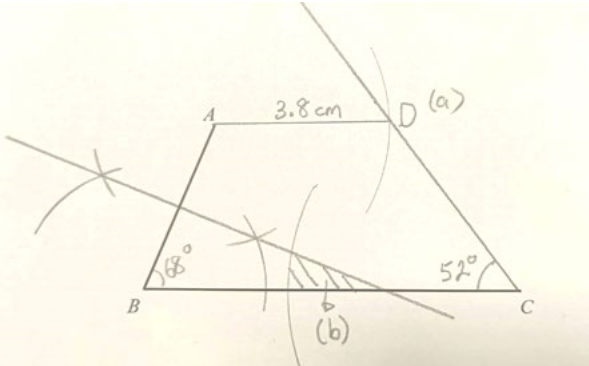
$$PT = \frac{20 \sin 158.3^\circ}{\sin 0.9^\circ}$$

$$= 470.79555$$

[M1]

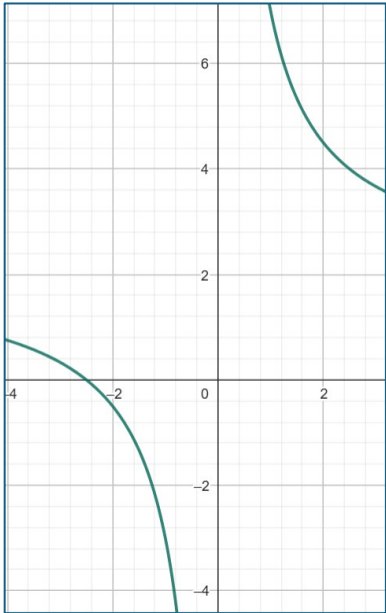
	$\sin 20.8^\circ = \frac{TF}{470.79555}$ $TF = 470.79555 \sin 20.8^\circ$ $= 167 \text{ m (3 s.f.)}$	[M1] [A1]
23(a)	$\mathbf{P} = \begin{pmatrix} 5 & 4 & 6 \\ 8 & 7 & 9 \end{pmatrix}$	[B1]
23(b)	$\mathbf{T} = \begin{pmatrix} 5 & 4 & 6 \\ 8 & 7 & 9 \end{pmatrix} \begin{pmatrix} 120 \\ 80 \\ 100 \end{pmatrix}$ $= \begin{pmatrix} 1520 \\ 2420 \end{pmatrix}$	[B2: B1 for each of the element]
23(c)	The elements in T represent the <u>total cost</u> (\$1520) and the <u>total revenue</u> (\$2420; or selling price) <u>respectively</u> of the cakes <u>sold</u> by the shop <u>in July</u> .	[B1: not necessary to state the values of the elements; <u>do not accept</u> the term “earnings”]
23(d)	$\mathbf{Q} = \begin{pmatrix} -1 & 1 \end{pmatrix}$	[B1]
24(a)	Volume of one cup $= \frac{1}{3} \pi \left(\frac{6.9}{2} \right)^2 (9.1)$ $= 113.4248$ $= 113 \text{ cm}^3 \text{ (3 s.f.)}$	[B1]
24(b)	$18.9 \text{ l} = 18\,900 \text{ cm}^3$ Max number of cups $= \frac{18900}{113.4248}$ $= 166.63$ $= 166 \text{ cups that are completely filled}$	[M1] [A1]
24(c)	Let the curved surface area of smaller cone (i.e. cup) be A_1 , t and that of larger cone (i.e. cup + frustrum) be A_2 . By similar cones, $\left(\frac{d_2}{d_1} \right)^2 = \frac{A_2}{A_1} = 2$ $\frac{d_2}{d_1} = \sqrt{2}$	[M1]

	$\frac{V_2}{V_1} = \left(\frac{d_2}{d_1}\right)^3$ $= (\sqrt{2})^3$ $V_2 = (\sqrt{2})^3 \times 113.4248$ $= 320.81378$ Volume of frustrum shaped cup $= 320.81378 - 113.4248$ $= 207 \text{ cm}^3 \text{ (3 s.f.)}$	[M1] [M1] [A1]
25(a)	Position of median $= \frac{22+1}{2}$ $= 11.5$ Median $= \frac{2+3}{2}$ $= 2.5$	[B1]
25(b)	The student's claim is <u>true</u> because there are <u>6 missing data</u> in the dot diagram. If all the 6 students scored 0 goal (or 1 goal), the modal number of goals scored would be 0 (or 1) instead of 2.	[B1: student <u>must provide an example where the mode is 0 or 1</u>]
25(ci)	0	[B1]
25(cii)	$\frac{4}{22} = \frac{2}{11}$	[B1]
25(ciii)	$\frac{11}{22} = \frac{1}{2}$	[B1]

26(a)	1 cm : 20 000 cm 1 cm: 200 m 3.8 cm : 760 m 	[M1: construction of 52° line or 3.8 cm arc from A] [A1: complete quadrilateral and labeling of D]
26(b)	Refer to diagram above.	[M1: construction of perpendicular bisector or 5 cm arc from C] [A1: correct shaded region]
26(c)	$\angle ABC = 68^\circ$ Length of pathway $= \frac{68}{360} \times 2\pi(400)$ $= 475 \text{ m (3 s.f.)}$	[M1] [A1]

2025 Prelim paper 2
Marking Scheme

Qn No.	Qn Part	Solutions	Marks (Remarks)	Total
1	(a)(i)	$x = \frac{3h^2(y+b)}{b} - 1$ $2 = \frac{3h^2(0+5)}{5} - 1$ $3 = 3h^2$ $h^2 = 1$ $h = \pm 1$	M1: substitution A1: both answers	[2]
	(a)(ii)	$x = \frac{3h^2(y+b)}{b} - 1$ $xb = 3h^2(y+b) - b$ $xb = 3h^2y + 3h^2b - b$ $xb + b - 3h^2b = 3h^2y$ $b(x+1-3h^2) = 3h^2y$ $b = \frac{3h^2y}{x+1-3h^2}$	M1: Multiply denominator throughout M1: Grouping and factorising b A1	[3]
	(b)	$6x - 3y = 16 \text{ --- (1)}$ $9x + 2y = 11 \text{ --- (2)}$ $(1) \times 2$ $12x - 6y = 32$ $(2) \times 3$ $27x + 6y = 33$ $39x = 65$ $x = 1\frac{2}{3}$ $6\left(1\frac{2}{3}\right) - 3y = 16$ $y = -2$	M1: Substitution/ Elimination A1 A1	[3]
	(c)	$\frac{19x+3}{2x^2-5x-3} + \frac{2}{x-3} = 7$		

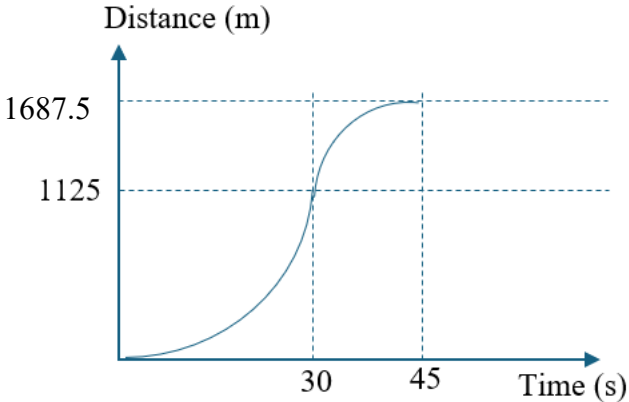
		$\frac{19x+3}{(2x+1)(x-3)} + \frac{2}{x-3} = 7$ $19x+3+2(2x+1) = 7(2x^2-5x-3)$ $19x+3+4x+2 = 14x^2-35x-21$ $14x^2-58x-26=0$ $x = \frac{58 \pm \sqrt{(-58)^2 - 4(14)(-26)}}{2(14)}$ $x = -0.41 \text{ or } x = 4.55$	M1 M1 A1	[3]
2	(a)	5.3	B1	[1]
	(b)	Refer to graph 	B2: correct points plotted B1: any one error B1: Smooth curve	[3]
	(c)	$a = 0.3 ; b = 3.7$	B1, B1	[2]
	(d)	- 1.13 to - 1.39	M1: drawing of correct tangent A1: Within the range	[2]
	(e)	$2 + \frac{5}{x} = \frac{5-x}{4}$ $8 + \frac{20}{x} = 5-x$ $8x+20 = 5x-x^2$		

		$x^2 + 3x + 20 = 0$ $A = 1$ and $B = -3$	B1, B1	[2]
3	(a)	$\frac{1500}{x}$	B1	[1]
	(b)	$\frac{1500}{x-50}$	B1	[1]
	(c)	$\frac{1500}{x-50} - \frac{1500}{x} = 2\frac{1}{2}$ $1500x - 1500(x-50) = \frac{5}{2}(x^2 - 50x)$ $3000x - 3000(x-50) = 5(x^2 - 50x)$ $3000x - 3000x - 150000 = 5x^2 - 250x$ $5x^2 - 250x + 150000 = 0$ $x^2 - 50x + 30000 = 0$ (Shown)	M1: Correct equation AG1	[2]
	(d)	$x^2 - 50x + 30000 = 0$ $(x+150)(x-200) = 0$ $x=200$ or $x=-150$	M1: factorisation or other method A1, A1	[3]
	(e)	$\frac{200}{\pi} = 63.7 \text{ cm (3 sf)}$	B1	[1]

4	(a)(i)	29 min	B1	[1]
	(a)(ii)	$34 - 23$ $= 11 \text{ min}$	M1 A1	[2]
	(a)(iii)	$\frac{80 - 44}{80} \times 100\%$ $= 45\%$	M1 A1	[2]
	(b)	The new cumulative frequency curve will meet the given curve at the median. However, <u>the gradient of the new cumulative frequency curve from the lower quartile to upper quartile will be less steep</u> as compared to given curve.	B1	[1]
	(c)(i)	$\frac{26}{80} \times \frac{25}{79} = \frac{65}{632}$	B1	[1]
	(c)(ii)	$\frac{26}{80} \times \frac{14}{79} \times 2$ $= \frac{91}{790}$	M1 A1	[2]
5	(a)(i)	$\overrightarrow{DB} = 16\mathbf{p} - 5\mathbf{q}$	B1	[1]
	(a)(ii)	$\overrightarrow{DP} = \frac{1}{4}(16\mathbf{p} - 5\mathbf{q})$ $\overrightarrow{AP} = \overrightarrow{AD} + \overrightarrow{DP}$ $= 5\mathbf{q} + \frac{1}{4}(16\mathbf{p} - 5\mathbf{q})$ $= \frac{15}{4}\mathbf{q} + 4\mathbf{p}$	M1 A1	[2]
	(b)	$\overrightarrow{DC} = \frac{4}{3}\overrightarrow{AB}$ $\overrightarrow{BC} = \overrightarrow{BA} + \overrightarrow{AP} + \overrightarrow{DC}$ $= -16\mathbf{p} + 5\mathbf{q} + \frac{64}{3}\mathbf{p}$ $= \frac{16}{3}\mathbf{p} + 5\mathbf{q}$ $\overrightarrow{BC} = \frac{4}{3}\left(\frac{15}{4}\mathbf{q} + 4\mathbf{p}\right)$	M1: find $\overrightarrow{BC}$	

		$= \frac{4}{3} \overrightarrow{AP}$ Since $\overrightarrow{BC} = \frac{4}{3} \overrightarrow{AP}$, they are parallel.	A1	[2]
	(c)	$\angle APB = \angle CBD$ (alternate $\angle$, $AP \parallel BC$) $\angle ABP = \angle CDB$ (alternate $\angle$, $AB \parallel DC$) Triangle APB is similar to Triangle CBD by AA similarity. Triangle APB : Triangle BCD $3^2 : 4^2$ $9 : 16$ OR $\frac{\text{Area of Triangle } APB}{\text{Area of Triangle } BAD} = \frac{3}{4}$ $\frac{\text{Area of Triangle } BAD}{\text{Area of Triangle } BCD} = \frac{3}{4}$ $\frac{\text{Area of Triangle } APB}{\text{Area of Triangle } BAD} \times \frac{\text{Area of Triangle } APB}{\text{Area of Triangle } BAD}$ $= \frac{3}{4} \times \frac{3}{4}$ $= \frac{9}{16}$	B1: Any correct line B1: All correct A1 M1: Any of the ratio M1 A1	[3]
	(d)	Since Triangle APD and Triangle APB have common height, Triangle APD : Triangle APB $1 : 3$ Triangle APD : Trapezium $ABCD$ $3 : 28$ (Since $16 + 9 + 3 = 28$) OR	M1 A1	

		$\frac{\text{Area of Triangle } APD}{\text{Area of Triangle } BAD} \times \frac{\text{Area of Triangle } BAD}{\text{Area of Trapezium } ABCD}$ $= \frac{1}{4} \times \frac{3}{7}$ $= \frac{3}{28}$	M1 A1	[2]
(6)	(a)	$\angle POS = \angle QOR$ (vertically opposite $\angle$) $OS = OR$ (radii of circle) $\angle OSP = \angle ORQ$ (tangent $\perp$ radius) Triangle PSO is congruent to Triangle QRO (ASA). $\angle ORQ = \angle OSP$ (tan $\perp$ rad) $OQ = OP$ (radii of circle) $OR = OS$ (radii of circle) Triangle PSO is congruent to Triangle QRO (RHS).	B1: For any line B1: All correct	[2]
	(b)(i)	$QR = \sqrt{8^2 - 4.36^2}$ $= 6.707488353$ Area of triangle: $\frac{1}{2} \times 4.36 \times 6.707488353$ $= 14.6 \text{ cm}^2$ (3 sf)	M1 M1 A1	[3]
	(b)(ii)	Shaded circular area: $\pi(8)^2 - \pi(4.36)^2$ $= 141.3415101$ $\angle ROQ = \cos^{-1}\left(\frac{4.36}{8}\right)$ $= 0.9944072121$ Area of sector: $\frac{1}{2}(4.36)^2(0.9944072121)$ $= 9.451641669$ Total shaded area: $141.34151 - 2(14.62232461 - 9.451641669) +$ $2(9.451641669)$ $= 149.9034 \text{ cm}^2$ $= 150 \text{ cm}^2$ (3 sf)	M1 M1 M1 A1	[4]

7	(a)(i)	$75 \div 30 = 2\frac{1}{2} \text{ m/s}^2$	B1	[1]
	(a)(ii)	$75 \div 5 = 15 \text{ s}$	B1	[1]
	(a)(iii)		B1: correct shape for both sections B1: correct values on both axes	[2]
	(b)(i)	For 70 m/s, Time for acceleration: $70 \div 2\frac{1}{2} = 28 \text{ min}$ Time for deceleration: $70 \div 5 = 14 \text{ min}$ Distance covered by 70 m/s $\frac{1}{2} \times 28 \times 70 + \frac{1}{2} \times 70 \times 14 = 1470 \text{ m}$ The <u>plane will be able to decelerate safely</u> if the speed of the aircraft is 70m/s <u>as the distance covered would be less than 1600 m.</u>	M1 M1 M1 A1: Must include comparison with 1600 m	[4]
	(b)(ii)	V_1 would be <u>lower</u> as there are less friction, and the runway is of a fixed length.	B1	[1]
8	(a)	Angle ABD: $180^\circ - 76^\circ - 50^\circ = 54^\circ$ Bearing of D from B: $360^\circ - 54^\circ - 76^\circ = 230^\circ$	M1 A1	[2]
	(b)	Let AX be the shortest distance.		

		$AX = 55 \sin 54^\circ$ $= 44.49593469$ $\tan \theta = \frac{10}{44.49593469}$ $\theta = 12.66618^\circ$ $= 12.7^\circ$	M1 M1 A1	[3]
	(c)	$\frac{BD}{\sin 76^\circ} = \frac{55}{\sin 50^\circ}$ $BD = \frac{55 \sin 76^\circ}{\sin 50^\circ}$ $= 69.664711 \text{ m}$ Area of park: $\frac{1}{2} \times 55 \times 69.664711 \times \sin 54^\circ + \frac{1}{2} \times 30 \times 69.664711 \times \sin 130^\circ$ $= 2350.392187$ $= 2350 \text{ m}^2$	M1 M1, M1: Area of each triangle A1	[4]
	(d)	$BC = \sqrt{30^2 + 69.664711^2 - 2(30)(69.664711)\cos 130^\circ}$ $= 91.86919365 \text{ m}$ $\frac{AD}{\sin 54^\circ} = \frac{55}{\sin 50^\circ}$ $AD = \frac{55 \sin 54^\circ}{\sin 50^\circ}$ $= 58.08531749 \text{ m}$ Perimeter: $55 + 30 + 91.86919365 + 58.08531749$ $= 234.9545111$ <u>I disagree with Tony</u> as the perimeter is less than 240m.	M1: Find BC M1: Find AD A1: Need concluding statement with comparison with 240 m	[3]
9	(a)	$9880 - 1480 - 10 - 5 = \$8385$	B1	[1]

	(b)	Based on lowest rate, $54\,000 \times 1.280108$ $= \text{SGD } 69\,125.83$ OR Based on highest rate, $54\,000 \times 1.31154$ $= \text{SGD } 70\,823.16$ OR Based on average rate, $54\,000 \times ((1.280108+1.31154)/2)$ $= \text{SGD } 69\,974.50$	M1 A1	[2]
	(c)	Only Cash Components: Buyer Stamp Duty: $1800 + 180\,000 \times 0.02 + 640\,000 \times 0.03 + 300\,000 \times 0.04$ $= \\$36\,600$ Booking Fee: $0.05 \times 1\,300\,000 = \\$65\,000$ Total: $3000 + 500 + 36\,600 + 65\,000 = \\$105\,100$	M1: BSD M1: Booking Fee A1	[3]
	(d)	Assumption: Mr Sim used current account and matured fixed deposit to pay for the condominium. Outstanding amount: $0.95 \times 1\,300\,000 = \\$1\,235\,000$ Assuming that the contribution from his June pay is negligible Remaining amount to be covered by Bank loan $1\,235\,000 - 350\,000 - (69\,974.50 - 5100)$ $= \\$820\,125.50$ Interest over 20 years: $\frac{820125.50 \times 3.3 \times 20}{100}$ $= \\$541\,282.83$	M1: Find loan amount M1: Interest	

		Suggested condo instalment: $\frac{541282.83 + 820125.50}{20 \times 12}$ $= \\$5672.53$ Loan limit: $0.75 \times 1\,300\,000 = \\$975\,000 > \\$820\,125.50$ Salary limit: $0.55 \times 9880 = \\$5434 < \\$5672.53 + 550$ Mr Sim will not secure a bank loan as he does not meet the salary limit.	M1: Instalment M1 M1 A1: correct conclusion with correct LL and SL	[6]
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