

Answers

1a	$10a^2b^5$
bi	$(x-2)^2 - 10$
ii	$(2, -10)$
ci	10.5
ii	$n = m^2 - 2l$
d	$x = 1.76$ or $x = -1.42$
2ai	\$2556
ii	$66\frac{2}{3}\%$
b	Plan B offers better returns with a higher interest.
3ai	$x = 17$ $5 + 18 + 10 + 17 + 2 = 52$
ii	12
iii	$x = 5$
bii	$\frac{1}{10}$
iii	The dart will always hit one of the coloured region.
4a	Mike's claim is accurate.
ii	240°
iii	130°
5a	-8
ci	Plot $y = -5x - 8$ Since the line intersects the curve only at one point, there is only one solution for $2x^3 - x^2 - 5x = -8$.
ii	-1.9
d	-1.1
6ai	3270 m^2
ii	78.4m
iii	$\angle PSR = 64.0^\circ$
v	56.4 m
bi	10.6 m
ii	10.6°
7ai	20°
ii	60°
iii	45°
bi	50.5 cm^2
ii	11.3 cm
8a	$y = 90 - \frac{3}{2}x$
b	$A = 180x - 3x^2$
c	$x = 44.14 \text{ m}$ or $x = 15.86 \text{ m}$

8d	<p>x-coordinate of turning point = 30</p> <p>y-coordinate of turning point = $180(30) - 3(30)^2 = 2700 \text{ m}^2$</p>
e	<p>Area is maximum, Because the coefficient of x^2 is negative.</p>
9a	2415 or 2420 litres
bi	61.6 cm
ii	39.9 cm
c	11 cans
10a	Bearing = $360 - 70 = 290^\circ$
b	8540 km
c	<p>Time difference between Singapore and Paris = $8 - 2 = 6$ hours Singapore 6 hours ahead of Paris Total distance = $4150 + 8540 = 12,690 \text{ km}$ Total time including stop over = $\frac{12690}{850} + 2 = 16.929$ = 16 hrs 56 mins Adjustment for time difference = $16 \text{ hrs } 56 \text{ mins} - 6 \text{ hrs} = 10 \text{ hrs } 56 \text{ mins}$</p> <p>11:15 pm \rightarrow 12:00 am Saturday (45 minutes) 12:00 am \rightarrow 10:00 am Sunday (10 hours) 10:00 am \rightarrow 10:11 am Sunday (11 minutes) Reach Paris at 10:11 am Sunday</p>