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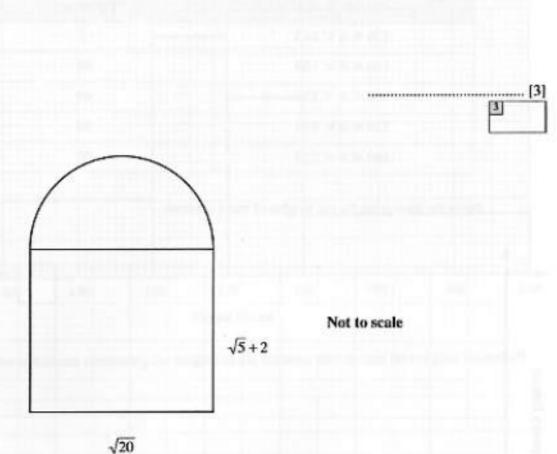
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1 Write 0.54 as a fraction in its lowest terms.



This shape is formed from a rectangle and a semi-circle. The lengths are in centimetres.

Show that the total area of this shape is $10 + 4\sqrt{5} + \frac{5\pi}{2}$ square centimetres.

[3]

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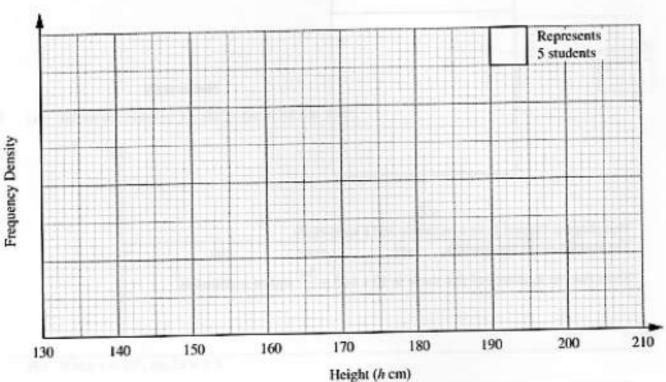


- 3 Asha did a Sports Studies project.
 - (a) He recorded the heights, in centimetres, of 200 students who do not play basketball.

Here are his results.

Heights (h cm)	Frequency
130 ≤ h < 140	3
140 ≤ h < 160	89
160 ≤ h < 170	49
170 ≤ h < 180	39
180 ≤ h < 210	20

Draw the histogram for the heights of these students.



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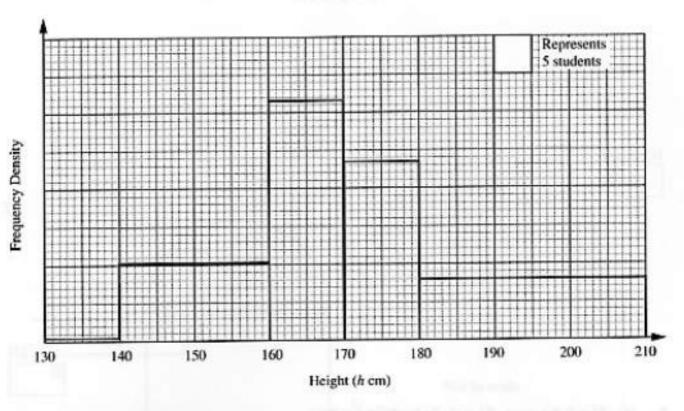
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OCR CRO ROC OCR CRO ROC CR CRO ROC COCR CRO ROC ROCK CRO ROC ROCK CRO CROC ROCE CRO CROC (b) He also recorded the heights of 200 students who do play basketball.

Here is the histogram for the heights of those students.



Make two comments comparing the heights of the students who do and do not pla	ry basketball.

	[2]

4 Solve these simultaneous equations algebraically.

$$y = x - 2$$

 $x^2 + y^2 = 100$

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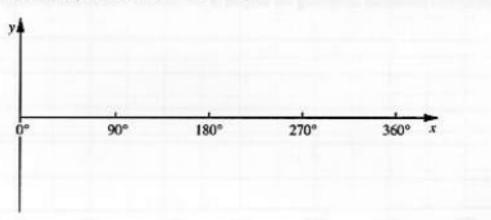
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[3]

5 (a) Sketch the curve of $y = \sin 2x$ for $0^{\circ} \le x \le 360^{\circ}$.



(b) When $x = 15^{\circ}$, $\sin 2x = 0.5$.

Use your graph to find another value of x which is a solution of $\sin 2x = 0.5$.

(b)^{*}[1]

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6 This is the graph of $y = x^2$.

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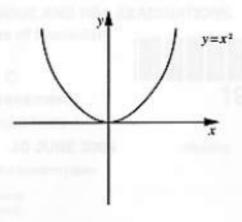
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OCR CRO (a) On the diagram sketch the graph of $y = x^2 - 5$.



(b) Describe the transformation that maps the graph of $y = x^2$ onto $y = (x - 4)^2$.

[2]

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7	Prove that			5x - 2
		x+2	3x -	3x(x+2)

[3]

[1]

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