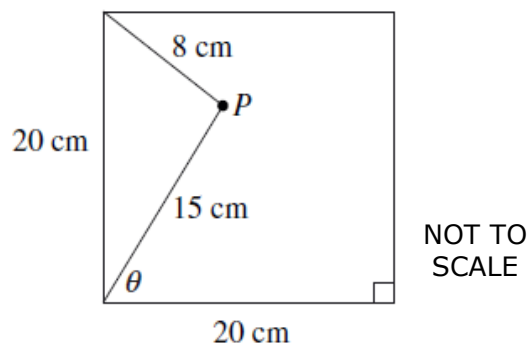




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- 2016 12 c** Square tiles of side length 20 cm are being used to tile a bathroom. The tiler needs to drill a hole in one of the tiles at a point P which is 8 cm from one corner and 15 cm from an adjacent corner. To locate the point P the tiler needs to know the size of the angle θ shown in the diagram. Find the size of the angle θ to the nearest degree.



3

Consider α . Using the cosine rule:

$$\cos \alpha = \frac{20^2 + 15^2 - 8^2}{2(20)(15)}$$

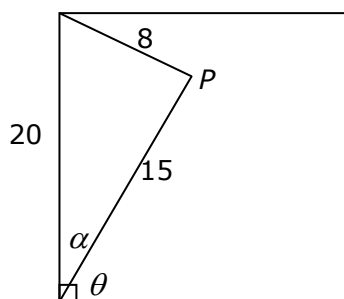
$$= 0.935$$

$$\alpha = 20.77185505\dots$$

$$= 21 \text{ (nearest whole)}$$

$$\therefore \theta = 90 - 21 \text{ (}\angle \text{ in square)}$$

$$= 69$$



State Mean:
2.27

* These solutions have been provided by [projectmaths](#) and are not supplied or endorsed by BOSTES.

BOSTES: Notes from the Marking Centre

This information is released by BOSTES in late Term 1 2017.