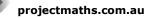
HSC Worked Solutions



1

MX 10 The graph of the function $y = \sin^{-1}(x - 4)$ is transformed by being dilated horizontally with a scale factor of 2 and then translated to the right by 1. What is the equation of the transformed graph?

A. $y = \sin^{-1}(\frac{x-9}{2})$	B. $y = \sin^{-1}(\frac{x-10}{2})$
C. $y = \sin^{-1}(2x - 6)$	D. $y = \sin^{-1}(2x - 5)$

Α

• horizontal dilation of factor of 2:

$$\therefore \frac{1}{a} = 2$$

$$a = \frac{1}{2}$$

$$\therefore y = \sin^{-1}(\frac{x}{2} - 4)$$

• translated to the right by 1:

$$\therefore y = \sin^{-1}(\frac{x-1}{2} - 4)$$
$$y = \sin^{-1}(\frac{x-1-8}{2})$$
$$y = \sin^{-1}(\frac{x-9}{2})$$

* These solutions have been provided by *projectmaths* and are not supplied or endorsed by NESA.

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