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12 5 What is the perpendicular distance of the point (2, -1) from the line y = 3x + 1?

(A) $\frac{6}{\sqrt{10}}$

(B) $\frac{6}{\sqrt{5}}$

(C) $\frac{8}{\sqrt{10}}$

(D) $\frac{8}{\sqrt{5}}$

State Mean: **0.71**

C

Use
$$(2, -1)$$
, $3x - y + 1 = 0$,

$$d = \left| \frac{ax_1 + by_1 + c}{\sqrt{a^2 + b^2}} \right|$$

$$= \left| \frac{3(2) - 1(-1) + 1}{\sqrt{3^2 + (-1)^2}} \right|$$

$$= \left| \frac{8}{\sqrt{10}} \right|$$

$$= \frac{8}{\sqrt{10}}$$

^{*} These solutions have been provided by projectmaths and are not supplied or endorsed by the Board of Studies