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- 2014 4** The acute angle between the lines $2x + 2y = 5$ and $y = 3x + 1$ is θ . **1**
What is the value of $\tan \theta$?
(A) $\frac{1}{7}$ (B) $\frac{1}{2}$ (C) 1 (D) 2

D

Gradient of $2x + 2y = 5$ is $m_1 = -1$.

Gradient of $y = 3x + 1$ is $m_2 = 3$.

$$\begin{aligned}\text{Subs in } \tan \theta &= \left| \frac{m_1 - m_2}{1 + m_1 m_2} \right| \\ &= \left| \frac{-1 - 3}{1 + (-1)(3)} \right| \\ &= \left| \frac{-4}{-2} \right| \\ &= 2\end{aligned}$$

State Mean:
0.67

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