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**2016 11**  
**b** Differentiate  $\frac{x+2}{3x-4}$ .

**2**

Using the quotient rule,

$$\text{Let } u = x + 2 \quad \frac{du}{dx} = 1$$

$$\text{Let } v = 3x - 4 \quad \frac{dv}{dx} = 3$$

$$\begin{aligned} \frac{d}{dx} \left[ \frac{x+2}{3x-4} \right] &= \frac{v \frac{du}{dx} - u \frac{dv}{dx}}{v^2} \\ &= \frac{(3x-4) \cdot 1 - (x+2) \cdot 3}{(3x-4)^2} \\ &= \frac{3x-4-3x-6}{(3x-4)^2} \\ &= \frac{-10}{(3x-4)^2} \end{aligned}$$

State Mean:  
**1.80**

\* 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.