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**2014 3**

What is the constant term in the binomial expansion of  $\left(2x - \frac{5}{x^3}\right)^{12}$  ?

- (A)  $\binom{12}{3} 2^9 5^3$       (B)  $\binom{12}{9} 2^3 5^9$       (C)  $-\binom{12}{3} 2^9 5^3$       (D)  $-\binom{12}{9} 2^3 5^9$

**C**

$$\begin{aligned}\text{Constant term} &= \binom{12}{3} (2x)^9 \left(-\frac{5}{x^3}\right)^3 \\ &= \binom{12}{3} 2^9 x^9 (-5)^3 \left(\frac{1}{x^9}\right) \\ &= -\binom{12}{3} 2^9 5^3\end{aligned}$$

State Mean:  
**0.78**

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