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- 2014 9** The remainder when the polynomial  $P(x) = x^4 - 8x^3 - 7x^2 + 3$  is divided by  $x^2 + x$  is  $ax + 3$ . What is the value of  $a$ ? **1**
- (A) -14                      (B) -11                      (C) -2                      (D) 5

**C**

$$x^4 - 8x^3 - 7x^2 + 3 = x(x + 1) \cdot Q(x) + (ax + 3)$$

$$\text{Let } x = -1: \quad (-1)^4 - 8(-1)^3 - 7(-1)^2 + 3 = (-1)(-1 + 1) \cdot Q(-1) + (a(-1) + 3)$$

$$5 = 0 - a + 3$$

$$a = -2$$

State Mean:

**0.79**

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