A2b Operations with Polynomials

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$$2x(3x+5)+3(3x+5)=ax^2+bx+c$$

In the equation above, a, b, and c are constants. If the equation is true for all values of x, what is the value of b ?

1

Which expression is equivalent to $(2x^2-4)-(-3x^2+2x-7)$?

A) $5x^2-2x+3$

B) $5x^2+2x-3$

C) $-x^2-2x-11$

D) $-x^2+2x-11$

6

$$3x^2-5x+2$$
$$5x^2-2x-6$$

Which of the following is the sum of the two polynomials shown above?

A) $8x^2-7x-4$

B) $8x^2+7x-4$

C) $8x^4-7x^2-4$

D) $8x^4+7x^2-4$

5

$$(x^2y-3y^2+5xy^2)-(-x^2y+3xy^2-3y^2)$$

Which of the following is equivalent to the expression above?

A) $4x^2y^2$

B) $8xy^2-6y^2$

C) $2x^2y+2xy^2$

D) $2x^2y+8xy^2-6y^2$

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If $(ax + 2)(bx + 7) = 15x^2 + cx + 14$ for all values of x, and $a + b = 8$, what are the two possible values for c ?

A) 3 and 5

B) 6 and 35

C) 10 and 21

D) 31 and 41

5

$$3(2x + 1)(4x + 1)$$

Which of the following is equivalent to the expression above?

A) $45x$

B) $24x^2 + 3$

C) $24x^2 + 18x + 3$

D) $18x^2 + 6$