

1. Rewrite each of the following expressions as an equivalent product of two binomials.

(a) $x(x+2)+3(x+2)$

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

(c) $-2x(x+12)+3(x+12)$

(d) $3(x-5)+3x(x-5)$

(e) $(2x-7)(x+2)+(3x+7)(x+2)$

(f) $(2x+5)(x-4)-(x-4)(5x+2)$

2. If $x+2$ has a value of 5, then which of the following is the value of $x(x+2)+3(x+2)$? Show the work that leads to your answer.

- (1) 30 (2) 25 (3) 15 (4) 10

3. When figuring out the amount of mulch would be needed for Alex’s back yard, he created an equation that approximates the number of bags, B , he’ll use. If his equation is $B = 4(2x+7)+3(2x+7)$ and $(2x+7)$ is equal to 2, how many bags will he need? Show your mindful manipulations.

4. Alex’s friend Pablo comes up with an exact equation to find out how many bags he needs. Use his equation to find out how many bags will actually be needed if $B = x(2x+7)+3(2x+7)+(x+4)(2x+7)$, where the quantity $(2x+7)$ equals 4. Show how you arrive at your answer.

R1. Taylor was factoring the following expression and checked her work. Identify her mistake and show her the correct way to factor the expression.

$$12x + 3$$

Taylor’s work
 $12x + 3 = 3(4x)$

Taylor’s check
 $3(4x) = 12x$

R2. Evaluate: $\frac{-3x^2+4}{4} - 1$ when $x = -1$

R3. Evaluate: $2a^2 + 3b$ if $a = 3$ and $b = -4$

R4. Simplify: $(3x^2)^2$

R5. Use your calculator to perform the calculations and round to the nearest thousandth: $\frac{4}{\pi}$

R6. Consecutive Integers are integers that are one after another. Fill in the blanks 3, 4, 5 __, 7, __

R7. Fill in the blanks with consecutive even integers: -2, 0, 2, __, 6, __

R8. Fill in the blanks with consecutive odd integers: -3, -1, __, 3, __

1. (a) $(x+3)(x+2)$

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

(c) $(-2x+3)(x+12)$

(d) $(3+3x)(x-5)$

(e) $((2x-7)+(3x+7))(x+2)$

(f) $(x-4)((2x+5)-(5x+2))$

2. (1)

3. 14

4. 16

R1. She forgot to divide $\frac{3}{3} = 1$, $3(4x+1)$

R2. $\frac{1}{4}$

R3. 6

R4. $9x^4$

R5. 1.273

R6. 6, 8

R7. 4, 8

R8. 1, 3