

1. Dividend: Polynomial expression being divided
Divisor: Polynomial expression dividing the dividend
Quotient: Number of times dividend is divisible by divisor

2. $5x-2$

3. $x^2 - x - 2 - \frac{4}{7x-1}$

4. $3x^2-x+1$ |

5. $2x^2-4x-6$

6. $11x^3 + 3x^2 - 2x + 4$

7. $-9x^3 + 3x^2 + 7x + 3$

8. $6x^5 - 8x^4 - 14x^3$

9. $a^2 - b^2$

10. $2x^3 - 3xyz - 5xy^2 + 2x^2y - 3y^2z - 5y^3$

Remember QUIZ tomorrow on polynomials: add, subtract, multiply & divide

Alg 2 Homework 1-2

Name Key

1. Describe in your own words the following vocabulary words. Quotient + rem...
 Divisor / Dividend

Dividend: Polynomial expression being dividedDivisor: Polynomial expression dividing the dividendQuotient: Polynomial expression result = # times dividend is divisible by divisorDivide by using long division. Check your answer by multiplying.

$$\begin{array}{r} 5x-2 \\ 4x-1 \overline{) 20x^2-13x+2} \\ \underline{-(20x^2-5x)} \\ -8x+2 \\ \underline{-(-8x+2)} \\ 0 \end{array}$$

$$\begin{aligned} \text{Check: } (4x-1)(5x-2) \\ = 20x^2 - 8x - 5x + 2 \\ = 20x^2 - 13x + 2 \checkmark \end{aligned}$$

$$\begin{array}{r} x^2-x-2-\frac{4}{7x-1} \\ 7x-1 \overline{) 7x^3-8x^2-13x-2} \\ \underline{-(7x^3-x^2)} \\ -7x^2-13x \\ \underline{-(-7x^2+x)} \\ -14x-2 \\ \underline{-(-14x+2)} \\ -4 = \text{rem.} \end{array}$$

$$\begin{aligned} \text{Check: } (7x-1)(x^2-x-2-\frac{4}{7x-1}) \\ = (7x-1)(x^2-x-2) + (7x-1)(-\frac{4}{7x-1}) \\ = 7x^3-7x^2-14x-x^2+x+2-4 \\ = 7x^3-8x^2-13x-2 \checkmark \end{aligned}$$

$$\begin{array}{r} 3x^2-x+1 \\ 2x+2 \overline{) 6x^3+4x^2+0x+2} \\ \underline{-(6x^3+6x^2)} \\ -2x^2+0x \\ \underline{-(-2x^2-2x)} \\ 2x+2 \\ \underline{-(2x+2)} \\ 0 = \text{Rem.} \end{array}$$

$$\begin{aligned} \text{Check: } (2x+2)(3x^2-x+1) \\ = 6x^3-2x^2+2x+6x^2-2x+2 \\ = 6x^3+4x^2+2 \checkmark \end{aligned}$$

5. Find an expression for the width of a rectangle whose length is represented by $x-2$ and whose area is represented by $2x^3-8x^2+2x+12$.

$$\begin{array}{r} 2x^2-4x-6 \\ x-2 \overline{) 2x^3-8x^2+2x+12} \\ \underline{-(2x^3-4x^2)} \\ -4x^2+2x \\ \underline{-(-4x^2+8x)} \\ -6x+12 \\ \underline{-(-6x+12)} \\ 0 \end{array}$$

Area $\square = lw \rightarrow w = \frac{\text{Area}}{l}$

$2x^2-4x-6$

Add, subtract or multiply. Write your answer in standard form.

$$6. (2x^2 + 3x + 4) + (11x^3 + x^2 - 5x) = 11x^3 + 3x^2 - 2x + 4$$

$$7. (4x^2 + 2x + 3) - (9x^3 + x^2 - 5x) = 4x^2 + 2x + 3 - 9x^3 - x^2 + 5x \\ = -9x^3 + 3x^2 + 7x + 3$$

$$8. 2x^3(3x^2 - 4x - 7) = 6x^5 - 8x^4 - 14x^3$$

$$9. (a+b)(a-b) = a^2 + ab - ab - b^2 = a^2 - b^2$$

$$10. (x+y)(2x^2 - 3yz - 5y^2) = x(2x^2 - 3yz - 5y^2) + y(2x^2 - 3yz - 5y^2) \\ = 2x^3 - 3xyz - 5xy^2 + 2x^2y - 3y^2z - 5y^3$$

1-3: Polynomial Practice Activity

Students: Need HW 1-3 & a smartphone if possible. Your teacher will instruct you.

