

1. $x + 2x$
 $3x$

2. $3x^2 - 2x^2 + x + 9x$
 $x^2 + 10x$

3. $2x(x - 5)$
 $2x^2 - 10x$

4. $(3x - 2) - (5x + 1)$
 $= 3x - 2 - 5x - 1 = -2x - 3$

5. $-2(3x^2 - 5x + 1)$
 $-6x^2 + 10x - 2$

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

7. $\frac{4x^2}{2x}$
 $2x$

8. $\frac{3}{4}x + \frac{x}{4}$
 $\frac{3}{4}x + \frac{1}{4}x = 1x = x$

9. $\frac{x}{2} - \frac{x}{5}$
 $= \frac{5x}{10} - \frac{2x}{10} = \frac{3x}{10}$

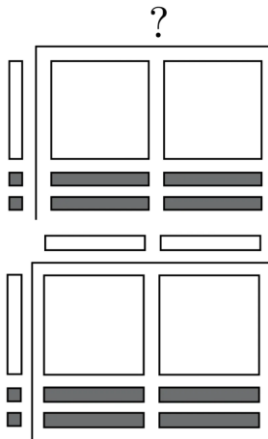
10. $2t - \frac{3t}{4}$
 $\frac{8t}{4} - \frac{3t}{4} = \frac{5t}{4}$

11. $(15k^2 - 10k) \div 5k$
 $= \frac{15k^2 - 10k}{5k}$
 $= \frac{15k^2}{5k} - \frac{10k}{5k}$
 $= 3k - 2$

12. $\frac{-15xy^3 - 10x^2y^2}{5xy^2}$
 $= \frac{-15xy^3}{5xy^2} + \frac{-10x^2y^2}{5xy^2}$
 $= -3y - 2x$

$$\begin{aligned}
 13. & -\frac{4a^2b-8ab^3}{2ab} \\
 & = \frac{-(4a^2b-8ab^3)}{2ab} \\
 & = \frac{-4a^2b+8ab^3}{2ab} \\
 & = \frac{8ab^3-4a^2b}{2ab} \\
 & = \frac{8ab^3}{2ab} - \frac{4a^2b}{2ab} \\
 & = 4b^2 - 2a
 \end{aligned}$$

14. Complete the following algebra tile diagram:



15. The polynomial $P(x) = 6x^5 + 5x^4 - 3x^2 + x^7 + 2$

a. How many terms are in this polynomial?

5

b. What is the coefficient of the x^5 term?

6

c. Find the degree of this polynomial

7 (the degree of a polynomial is the highest degree of any of the terms)

d. Find the constant term

2

16. Enrichment: What is the degree of the following polynomial? $5x^3y^2 + 3x - 2$

The first term has a degree of 5 because $3 + 2 = 5$.