

## Math 9 Lesson 2: Polynomials Extra Practice (solutions)

1.  $4a + 3a$   
 $7a$

2.  $a + 5a$   
 $6a$

3.  $4x - 9x$   
 $-5x$

4.  $5x^2 - 7x^2 + x + 5x$   
 $-2x^2 + 6x$

5.  $3x(x - 4)$   
 $3x^2 - 12x$

6.  $(5x - 1) - (7x + 2)$   
 $-2x - 3$

7.  $-3(5x^2 + 3x - 2)$   
 $-15x^2 - 9x + 6$

8.  $2x(1 - 5x + 7x^2)$   
 $14x^3 - 10x^2 + 2x$

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

10.  $(8a^2 - 6a) \div 2a$   
 $4a - 3$

11.  $\frac{15x^2}{10x}$   
 $\frac{3}{2}x$  or  $\frac{3x}{2}$

12.  $\frac{2}{3}x + \frac{x}{2}$   
 $\frac{7}{6}x$  or  $\frac{7x}{6}$

13.  $\frac{x}{3} - \frac{x}{7}$   
 $\frac{4}{21}x$

14.  $\frac{4x}{5} - \frac{x}{6}$   
 $\frac{19}{30}x$

$$15. \frac{3t}{4} - 2t$$

$$-\frac{5}{4}t$$

$$16. \frac{-25x^2y^3 - 15x^5y^6}{5x^2y^3}$$

$$-2 - 3x^3y^3$$

$$17. -\frac{8a^3b^2 - 12a^2b^3}{4a^2b^2}$$

$$-2a + 3b$$

$$18. x^3 - 4x^2 + 5x - (x^3 + 2x^2 - 3x)$$

$$-6x^2 + 8x$$

$$19. -3(2a^3 + 6a^2) + a - (5a^2 - 2a^3)$$

$$-6a^3 - 18a^2 + a - 5a^2 + 2a^3$$

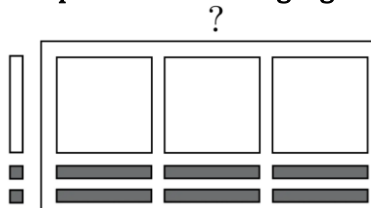
$$-4a^3 - 23a^2 + a$$

$$20. \frac{1}{3}(6x^2 - 9x + 15) - \frac{3}{2}(6x^2 + 12x - 4)$$

$$2x^2 - 3x + 5 - 9x^2 - 18x + 6$$

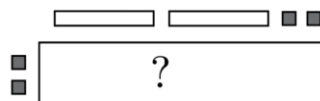
$$-7x^2 - 21x + 11$$

21. Complete the following algebra tile diagram:



$3x$  (three white sticks)

22. Complete the following algebra tile diagram:



$$-2(2x - 2) = -4x + 4$$

(four black sticks and 4 white tiny squares)

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

a. How many terms are in this polynomial?

5

b. What is the coefficient of the  $x^2$  term?

-1

c. Find the degree of this polynomial

6

d. Find the constant term

3

24. What is the degree of the following polynomial?  $5x^3y^2 + 3x^4y^4 - 2$   
 $4 + 4 = 8$