

T8-1 Retake Worksheet

can write polynomials in standard form, name leading coefficient, name degree and perform addition and subtraction on polynomials.

Find each sum or difference.

$$1. (4y + 5) + (-7y - 1) \quad \boxed{-3y + 4}$$

$$2. (-x^2 + 3x) - (5x + 2x^2) \quad \boxed{-3x^2 - 2x}$$

$$3. (4k^2 + 8k + 2) - (2k + 3) \quad \boxed{4k^2 + 6k - 1}$$

$$4. (2m^2 + 6m) + (m^2 - 5m + 7) \quad \boxed{3m^2 + m + 7}$$

$$5. (5a^2 + 6a + 2) - (7a^2 - 7a + 5) \quad \boxed{-2a^2 + 13a - 3}$$

$$6. (-4p^2 - p + 9) + (p^2 + 3p - 1) \quad \boxed{-3p^2 + 2p + 8}$$

$$7. (x^3 - 3x + 1) - (x^3 + 7 - 12x) \quad \boxed{9x - 6}$$

$$8. (6x^2 - x + 1) - (-4 + 2x^2 + 8x) \quad \boxed{4x^2 - 9x + 5}$$

$$9. (4y^2 + 2y - 8) - (7y^2 + 4 - y) \quad \boxed{-3y^2 + 3y - 12}$$

$$10. (w^2 - 4w - 1) + (-5 + 5w^2 - 3w) \quad \boxed{6w^2 - 7w - 6}$$

Determine whether each expression is a polynomial. If it is a polynomial, find the degree and determine whether it is a *monomial*, *binomial*, or *trinomial*.

$$11. 7a^2b^1 + 3b^2 - a^2b \quad \text{Deg: 3 Trinomial}$$

$$12. \frac{1}{5}y^3 + y^2 - 9 \quad \text{Deg: 3 Trinomial}$$

$$13. 6g^2h^3k \quad \text{Deg: 6 Monomial}$$

$$14. \frac{x + 3x^4 - 21x^2}{x^3} \quad \text{NOT POLYNOMIAL}$$

Write each polynomial in standard form. Identify the leading coefficient and degree.

$$15. 8x^2 - 15 + 5x^5 \quad 5x^5 + 8x^2 - 15 \quad \text{Deg: 5 LC: 5}$$

$$16. 10x - 7 + x^4 + 4x^3 \quad x^4 + 4x^3 + 10x - 7 \quad \text{Deg: 4 LC: 1}$$

$$17. 13x^2 - 5 + 6x^3 - x \quad 6x^3 + 13x^2 - x - 5 \quad \text{Deg: 3 LC: 6}$$

$$18. 4x + 2x^5 - 6x^3 + 2 \quad 2x^5 - 6x^3 + 4x + 2 \quad \text{Deg: 5 LC: 2}$$

19. GEOMETRY Find the perimeter of the square.

$$12k^2 + 4k + 18$$

$$8k^2 - 10k$$

$$6k^2 + 2k + 9$$

$$4k^2 - 5k$$



$$\boxed{20k^2 - 6k + 18}$$

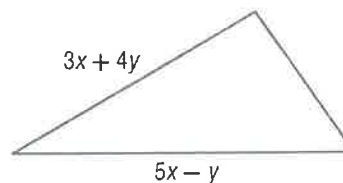
20. GEOMETRY The measures of two sides of a triangle are given. If P is the perimeter, and $P = 10x + 5y$, find the measure of the third side.

$$10x + 5y$$

$$-3x - 4y$$

$$-5x - y$$

$$\boxed{2x}$$



T8-2 Retake Worksheet

can multiply polynomials using the distributive & double distributive method.

Simplify each expression using distribution.

1. $-2g(g^2 - 2g + 2)$
 $-2g^3 + 4g^2 - 4g$

3. $-4x(2x^3 - 2x + 3)$
 $-8x^4 + 8x^2 - 12x$

5. $3y(-4x - 6x^3 - 2y)$
 $-12xy - 18x^3y - 6y^2$

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

9. $6a(2a - b) + 2a(-4a + 5b)$
 $12a^2 - 6ab - 8a^2 + 10ab$
 $4a^2 + 4ab$

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

4. $-4ax(10 + 3x)$
 $-40ax - 12ax^2$

6. $2x^2y^2(3xy + 2y + 5x)$
 $6x^3y^3 + 4x^2y^3 + 10x^3y^2$

8. $-x(2x^2 - 4x) - 6x^2$
 $-2x^3 + 4x^2 - 6x^2$
 $-2x^3 - 2x^2$

10. $4r(2r^2 - 3r + 5) + 6r(4r^2 + 2r + 8)$
 $8r^3 - 12r^2 + 20r + 24r^3 + 12r^2 + 48r$
 $32r^3 + 68r$

Simplify the following expressions using double distribution.

11. $(3b + 3)(3b - 2)$
 $3b(3b - 2) + 3(3b - 2)$
 $9b^2 - 6b + 9b - 6$
 $9b^2 + 3b - 6$

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12. $(2m + 2)(3m - 3)$
 $2m(3m - 3) + 2(3m - 3)$
 $6m^2 - 6m + 6m - 6$
 $6m^2 - 6$

13. $(4c + 1)(2c + 1)$
 $4c(2c + 1) + 1(2c + 1)$
 $8c^2 + 4c + 2c + 1$
 $8c^2 + 6c + 1$

14. $(5a - 2)(2a - 3)$
 $5a(2a - 3) - 2(2a - 3)$
 $10a^2 - 15a - 4a + 6$
 $10a^2 - 19a + 6$

15. $(4h - 2)(4h - 1)$
 $4h(4h - 1) - 2(4h - 1)$
 $16h^2 - 4h - 8h + 2$
 $16h^2 - 12h + 2$

16. $(x - y)(2x - y)$
 $x(2x - y) - y(2x - y)$
 $2x^2 - xy - 2xy + y^2$
 $2x^2 - 3xy + y^2$

17. $(w+4)(w^2+3w-6)$

$$w(w^2+3w-6) + 4(w^2+3w-6)$$

$$\begin{array}{r} w^3 + 3w^2 - 6w \\ + 4w^2 + 12w - 24 \\ \hline w^3 + 7w^2 + 6w - 24 \end{array}$$

19. $(k+4)(k^2+3k-6)$

$$\begin{array}{r} k^3 + 3k^2 - 6k \\ + 4k^2 + 12k - 24 \end{array}$$

$$\boxed{k^3 + 7k^2 + 6k - 24}$$

Solve each equations.

21. $2(a-3) = 3(-2a+6)$

$$\begin{array}{r} 2a - 6 = -6a + 18 \\ +6a + 6 \quad +6a + 6 \end{array}$$

$$8a = 24$$

$$\boxed{a=3}$$

23. $6(x^2+2x) = 2(3x^2+12)$

$$6x^2 + 12x = 6x^2 + 24$$

$$\begin{array}{r} 12x = 24 \\ \boxed{x=2} \end{array}$$

25. $4(3p^2+2p) - 12p^2 = 2(8p+6)$

$$12p^2 + 8p - 12p^2 = 16p + 12$$

$$\begin{array}{r} 8p = 16p + 12 \\ -16p \quad -16p \end{array}$$

$$\begin{array}{r} -8p = 12 \\ -8 \quad -8 \end{array}$$

$$\boxed{p = -\frac{3}{2}}$$

18. $(t+1)(t^2+2t+4)$

$$t(t^2+2t+4) + 1(t^2+2t+4)$$

$$\begin{array}{r} t^3 + 2t^2 + 4t \\ + t^2 + 2t + 4 \\ \hline t^3 + 3t^2 + 6t + 4 \end{array}$$

20. $(m+3)(m^2+3m+5)$

$$\begin{array}{r} m^3 + 3m^2 + 5m \\ + 3m^2 + 9m + 15 \end{array}$$

$$\boxed{m^3 + 6m^2 + 14m + 15}$$

22. $3x(x-5) - 3x^2 = -30$

$$\begin{array}{r} 3x^2 - 15x - 3x^2 = -30 \\ -15x = -30 \end{array}$$

$$\boxed{x=2}$$

24. $3(x+2) + 2(x+1) = -5(x-3)$

$$3x + 6 + 2x + 2 = -5x + 15$$

$$\begin{array}{r} 5x + 8 = -5x + 15 \\ +5x - 8 \quad +5x - 8 \end{array}$$

$$\frac{10x}{10} = \frac{7}{10}$$

$$\boxed{x = \frac{7}{10}}$$

T8-3 Retake Worksheet

I can multiply polynomials using FOIL method.

Find each product using the FOIL method.

1. $(q+6)(q+5)$

$$q^2 + 5q + 6q + 30$$

$$q^2 + 11q + 30$$

2. $(x+7)(x+4)$

$$x^2 + 4x + 7x + 28$$

$$x^2 + 11x + 28$$

3. $(n-4)(n-6)$

$$n^2 - 10n + 24$$

4. $(a+5)(a-6)$

$$a^2 - a - 30$$

5. $(3g+2)(3g-2)$

$$9g^2 - 4$$

6. $(2m-3)(2m+3)$

$$4m^2 - 9$$

7. $(6+u)^2$

$$(6+u)(6+u)$$

$$36 + 6u + 6u + u^2$$

$$u^2 + 12u + 36$$

8. $(r+t)^2$

$$(r+t)(r+t)$$

$$r^2 + rt + rt + t^2$$

$$r^2 + 2rt + t^2$$

9. $(3q+1)(3q-1)$

$$9q^2 - 1$$

10. $(c-d)^2$

$$(c-d)(c-d)$$

$$c^2 - cd - cd + d^2$$

$$c^2 - 2cd + d^2$$

11. $(2k-2)^2$

$$(2k-2)(2k-2)$$

$$4k^2 - 4k - 4k + 4$$

$$4k^2 - 8k + 4$$

12. $(w+3h)^2$

$$(w+3h)(w+3h)$$

$$w^2 + 3hw + 3hw + 9h^2$$

$$w^2 + 6hw + 9h^2$$

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13. $(m+5)(m^2+4m-8)$

$$\begin{array}{r} m^3 + 4m^2 - 8m \\ 5m^2 + 20m - 40 \\ \hline \end{array}$$

$$m^3 + 9m^2 + 12m - 40$$

15. $(2h+3)(2h^2+3h+4)$

$$\begin{array}{r} 4h^3 + 6h^2 + 8h \\ 6h^2 + 9h + 12 \\ \hline \end{array}$$

$$4h^3 + 12h^2 + 17h + 12$$

17. $(3n^2+2n-1)(2n^2+n+9)$

$$\begin{array}{r} 6n^4 + 3n^3 + 27n^2 \\ 4n^3 + 2n^2 + 18n \\ - 2n^2 - n - 9 \\ \hline \end{array}$$

$$6n^4 + 7n^3 + 27n^2 + 17n - 9$$

14. $(t+3)(t^2+4t+7)$

$$\begin{array}{r} t^3 + 4t^2 + 7t \\ + 3t^2 + 12t + 21 \\ \hline \end{array}$$

$$t^3 + 7t^2 + 19t + 21$$

16. $(3d+3)(2d^2+5d-2)$

$$\begin{array}{r} 6d^3 + 15d^2 - 6d \\ 6d^2 + 15d - 6 \\ \hline \end{array}$$

$$6d^3 + 21d^2 + 9d - 6$$

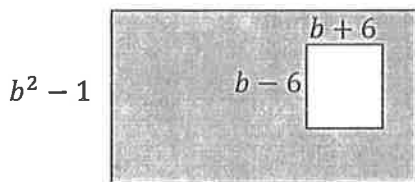
18. $(2t^2+t+3)(4t^2+2t-2)$

$$\begin{array}{r} 8t^4 + 4t^3 - 4t^2 \\ 4t^3 + 2t^2 - 2t \\ 12t^2 + 6t - 6 \\ \hline \end{array}$$

$$8t^4 + 8t^3 + 10t^2 + 4t - 6$$

GEOMETRY Write an expression to represent the shaded area of each figure.

$2b + 7$

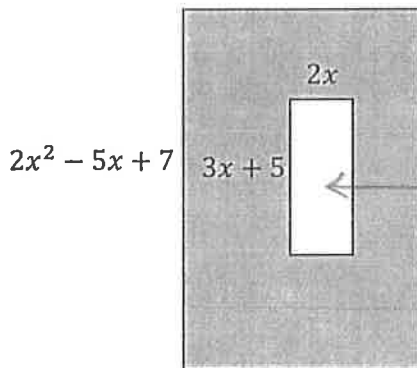


$$(b^2 - 1)(2b + 7) - [(b - 6)(b + 6)]$$

$$\begin{array}{r} b^3 + 7b^2 - 2b - 7 - [b^2 - 36] \\ - b^2 + 36 \\ \hline \end{array}$$

$$b^3 + 6b^2 - 2b + 29$$

$x^2 + 4x$



$2x^2 - 5x + 7$

$3x + 5$

$2x$

$$\begin{array}{r} 2x(3x + 5) \\ 6x^2 + 10x \end{array}$$

$$(x^2 + 4x)(2x^2 - 5x + 7)$$

$$2x^4 - 5x^3 + 7x^2$$

$$8x^3 - 20x^2 + 28x$$

$$2x^4 + 3x^3 - 13x^2 + 28x \leftarrow \text{BIG } \square$$

$$- 6x^2 - 10x \leftarrow \text{MINUS little one. } \square$$

$$2x^4 + 3x^3 - 19x^2 + 18x$$