ADDING & SUBTRACTING POLYNOMIALS

NAME: _____ DIV: _____ DATE: _____

★ Use Integer rules to subtract ★
↳ Add Opposite (Distribute "–" into brackets)
★ Combine like terms ★

#6
$$\begin{array}{r} x+5 \\ +\ -3x+1 \\ \hline -2x+6 \end{array}$$

Do Q# 8 - 27 (ODD)

Add.

8. $(3x+1)+(4x-2)$

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

10. $(-y^2+7y-5)+(2y^2+7y-4)$

11. $(2y^3-3y^2-1)+(-5y^2-4y^3+3)$

Add.

12. $\begin{array}{r} x+7 \\ +5x+2 \\ \hline \end{array}$

13. $\begin{array}{r} 3y^2+2y+8 \\ +4y^2+7y+11 \\ \hline \end{array}$

14. $\begin{array}{r} 5x-2y+6 \\ +3x-6y+9 \\ \hline \end{array}$

15. $\begin{array}{r} 5x^2-3x+7 \\ +2x^2-5x-12 \\ \hline \end{array}$

16. $\begin{array}{r} 5x^2+7x-9 \\ +4x^2-8x+11 \\ \hline \end{array}$

17. $\begin{array}{r} 3y^2-8y+3 \\ +2y^2+8y-9 \\ \hline \end{array}$

Simplify.

18. $(5z+6-3z^2)+(4-7z+2z^2)$

19. $(3x^2+2y^2-5)+(4x^2+3y^2-11)$

20. $(2x^4+7x-5x^2+3)+(2x^3-7)$

Add.

21. $(5x^2+7x-7)+(4x^2-8x+12)$

22. $(3y^2-8y+3)+(2y^2+8y-9)$

23. $(m^3+5m^2+3)+(4m^2+7)$

24. $(x^2+x+3)+(x^2-6)+(x^2-2x-3)$

Simplify.

25. $(4x^2+3xy-2y^2)+(-x^2-5xy+7y^2)$

26. $(5y^2+3y-7)+(-2y^2-5y+8)$

27. $(3x^2y-2xy+4y^2)+(x^2y+y^2)$

Practice Do Q# 1 - 25 (ODD)

Write the opposite.

1. x^2+4x+1

2. x^2-2x-3

3. $2x^2+x-5$

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

Subtract.

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

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

7. $(x+4)-(-x-3)$

8. $(3x-5)-(x+4)$

Subtract.

9. $\begin{array}{r} 5x^2+3x-5 \\ 2x^2-5x-4 \\ \hline \end{array}$

10. $\begin{array}{r} -3x^2+5x-7 \\ 2x^2+3x-3 \\ \hline \end{array}$

11. $\begin{array}{r} -4x^2-4x+3 \\ -3x^2+4x-8 \\ \hline \end{array}$

12. $\begin{array}{r} x^2-5x+1 \\ x^2-5x+6 \\ \hline \end{array}$

13. $\begin{array}{r} x^2+7x-1 \\ x^2+4x+1 \\ \hline \end{array}$

14. $\begin{array}{r} 12x^3+3x^2-5x \\ 9x^3+4x^2-4x \\ \hline \end{array}$

Subtract.

15. $(2y^2+3y-5)-(2y^2+4y+6)$

16. $(4s^2+s-2)-(-3s^2+s-5)$

17. $(y^2-5y+3)-(-2y^2+7y+5)$

Subtract.

18. $3x^2+7x-3$ from $2x^2-2x+3$

19. $5y^2+7y-5$ from $-2y^2+3y-2$

20. $-t^2+5t-1$ from $2t^2+3t+6$

Simplify.

21. $(-5n^2-n-8)-(-2n^2+7n-3)$

22. $(4+2x-x^2)-(3-7x^2+5x)$

23. $(-t^2+4t-7)-(3t^2+4t-2)$

24. $(x^2+5x+3)-(-x^2-7x+11)$

25. $(3m^2+7m-8)-(-m^2+m-1)$

26. $(-5y^2+7y-12)-(-3y^2+4y-2)$

Multiplying & Dividing Polynomials

Name: _____ Div: ____ Date: _____

★ Use your exponent rules ★ ★ Multiply digits or Divide ★

Practice Do Q# Left Side (1,4,7,10,...)

Multiply.

1. $5x \times 3y$
2. $2m \times 3n$
3. $5s \times 7t$
4. $4a \times 6b$
5. $3x^2 \times 2y$
6. $4a \times 5b^2$
7. $4b \times 3c$
8. $3a \times 2b^2$
9. $6s \times 3t$

Multiply.

10. $(3x)(2y)$
11. $(3a)(4b)$
12. $(5x^2)(2y^2)$
13. $(5ab)(3c)$
14. $(4x)(3y)$
15. $(6xy)(5z)$
16. $(2a^2)(3b^2)$
17. $(3a)(3b)$
18. $(7a)(5b)$

Multiply.

19. $(3x^2)(-5y^2)$
20. $-2t^3(-4a)$
21. $(6ab)(-2c^2)$
22. $-8a^2(3y^2)$
23. $(5x)(5yz)$
24. $-12x^2(4y^2)$

Multiply.

25. $(-2xy)(-7xy)$
26. $-5m^2(-2mn)$
27. $4s^2t^3(-3st)$
28. $-3abx(-2a^2b^4y)$
29. $-2s^2t^3(-5s^4t^2)$
30. $-5x^2y^2(4c^2x^3y^8)$

Multiply.

31. $-3x^2yz(5yz)$
32. $-2x^2(-3cy^2z^3)$
33. $-2x^2(-2y^2)(z)$
34. $-5x^2(-7y)(-2z)$
35. $-5x(-7y)(-2z)$
36. $-6xy(-5z^2)(3t^2)$

Multiply.

37. $(4a^2x^3z)(-2x^3y^2z^2)$
38. $(2b^2xy^4z^2)(-3xyz)$
39. $-5a^2b^3(-2a^2b^2)$

Multiply.

40. $(3abc)(-4abc)(2abc)$
41. $(-x^2yz)(2xy^2z)(-2xyz^2)$
42. $(-2jkl)(-3jkl)(-4jkl)$

Example:

#17 $\frac{28xy}{7y} \div \frac{7y}{7y}$

$= 4x$

Example:

#28 $-3abx(-2a^2b^4y)$

$= 6a^3b^5xy$

Practice Do Q# Left Side (1,4,7,10,13...)

Divide.

1. $\frac{6x}{3}$
2. $\frac{-15a}{5}$
3. $\frac{24y}{8}$
4. $\frac{36m}{9}$
5. $\frac{-30x}{6}$
6. $\frac{-25y}{5}$
7. $\frac{12x}{4x}$
8. $\frac{-18y}{3y}$
9. $\frac{24a}{a}$
10. $\frac{-32b}{-b}$
11. $\frac{-40x}{40}$
12. $\frac{-32m}{-8}$

Divide.

13. $\frac{15xyz}{5xy}$
14. $\frac{-18ab}{6a}$
15. $\frac{12pqr}{4pqr}$
16. $\frac{36abc}{-4a}$
17. $\frac{28xy}{7y}$
18. $\frac{-15rst}{3rt}$

Divide.

19. $25xy \div 5xy$
20. $22ab \div 11ab$
21. $21xyz \div 3xyz$
22. $9amn \div amn$
23. $36rst \div 3rs$
24. $39jkl \div 13kl$
25. $52pqrs \div 13ps$
26. $51defg \div 3eg$

Simplify.

27. $5x^4y^2 \div x^3y$
28. $-3a^3b^4 \div ab$
29. $18j^7k^7 \div (-9j^4)$
30. $-20x^5y^{15} \div 4x^2y$
31. $7a^3b^2c \div (-7ab)$
32. $-8x^2y^9 \div (-2xy^8)$

Simplify.

33. $\frac{10a^6b^3}{5a^4b^2}$
34. $\frac{-15x^6y^8}{-5x^5y^7}$
35. $\frac{-12m^6n^2}{4m^3n^2}$
36. $\frac{22x^2y^4z^3}{11xy^3z}$
37. $\frac{20a^4b^6c}{15a^4b^6c}$
38. $\frac{-18x^5y^8}{12x^3y^6}$

Simplify.

39. $\frac{10x^5y^3}{5x^3y^{-1}}$
40. $\frac{-12a^4b^{-3}}{3a^2b^{-5}}$
41. $\frac{-16m^8n^3}{4m^7n^3}$
42. $\frac{-9x^4y^3}{-3x^{-5}y^2}$
43. $\frac{-24x^{-5}y^{-2}}{18x^{-6}y^{-3}}$
44. $\frac{9p^3q^{15}}{p^2q^3r^2}$