Multiplying Polynomials by Monomials Part 2

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Mathematics 9
Polynomials
Multiplying Polynomials by Monomials Part 2

A. Definitions

1. **distributive principle/property:** a mathematical method for multiplying a single term by multiple terms.

$5x(x-3)$, $(a^3+3a^2-7a+1)6a^2$

B. Examples

1. Expand the following using distributive property.

a) $2m^2(4m^3+3)$

$8m^5+6m^2$

b) $(4x^2+3y)6x^2$

$24x^4+18x^2y$

c) $5ab(5a^2-4ab+c)$

$25a^3b-20a^2b^2+5abc$

d) $(-2m^2n)(5m^2-4mn)$

$-10m^4n+8m^3n^2$

e) $(3x^2y^2-5x^2y)7xy^2$

$21x^3y^4-35x^3y^3$

f) $4mn^2p(2m^3n^2-3m^2n-2p)$

$8m^4n^4p-12m^3n^3p-8mn^2p^2$

Assignment: Multiplying Polynomials by Monomials Part 2 Assignment

Name:_____

Multiplying Polynomials by Monomials Part 2 Assignment

A. Multiply or divide the following polynomials.

1) $(-3x)(5x)$

2) $(7m^2)(3m^3)$

3) $(6bc^2)(7ab)$

4) $(-5mn^2p)(-4m^4np^3)$

5) $\frac{8m^5}{2m^2}$

6) $\frac{-18x^2y^3}{6x^2y}$

7) $\frac{24a^3bc^4}{-2abc^2}$

8) $\frac{6xy^2z}{8xy}$

9) $3(2a-5)$

10) $3m(4m^2-1)$

11) $-3(3x-2y+4)$

12) $(6a-5b+c)2a$

13) $2m^3\left(3m^2-4m+1\right)$

14) $3xy\left(2x^2-4xy+5\right)$

15) $-a^2b\left(3a^2+5ab\right)$

16) $-5mn^2\left(3m^2-4mn+6m\right)$

17) $2x^2y^3\left(7x^2y^2-6x^2y\right)$

18) $\left(3y^2-2y-7\right)y$

19) $-6x^2\left(3x^2+5x-12\right)$

27) $-2x^2y(5xy-4y+3)$

Answers

1) $-15x^2$

2) $21m^5$

3) $42ab^2c^2$

4) $20m^5n^3p^4$

5) $4m^3$

6) $-3y^2$

7) $-12a^2c^2$

8) $\frac{3yz}{4}$

9) $6a-15$

10) $12m^3-3m$

11) $-9x+6y-12$

12) $12a^2-10ab+2ac$

13) $6m^5-8m^4+2m^3$

14) $6x^3y-12x^2y^2+15xy$

15) $-3a^4b-5a^3b^2$

16) $-15m^3n^2+20m^2n^3-30m^2n^2$

17) $14x^4y^5-12x^4y^4$

18) $3y^3-2y^2-7y$

19) $-18x^4-30x^3+72x^2$

20) $-10x^3y^2+8x^2y^2-6x^2y$