math Antics Worksheets

Name: _____

Date: _____

Polynomials and Terms

AB-WAP 1

Instructions: How many terms does each polynomial have? Write your answer in the blank provided.

1. 3 — $4x^3 + 4x^2 + x$
2. _____ — $a^3 - 5a^2 + a + 7$
3. _____ — $7x^6 - 10x^3 + 9x^2 + 5x - 8$
4. _____ — $x^8 + x^7 + x^6 + x^5 + x^4 + x^3 + x^2 + x$
5. _____ — $x^8 + x^7 + x^6 + x^5 + x^4 + x^3 + x^2 + x + 1$
6. _____ — $12b^2$
7. _____ — $xy - 5 + 9x^5 + 3x - 6x^2y - 25x^4$
8. _____ — $7x^2 - 10 + 5x - 8x^3 - x^4$
9. _____ — $5a^3 - b^2 + 5c - 8a + 12 + b + c$
10. _____ — $x - 1$

Instructions: Based on the number of terms, classify each of the following as a monomial, binomial, trinomial or polynomial.

1. binomial — $2x - 5y$
2. _____ — $6x^2 - x + 4$
3. _____ — $7x^6$
4. _____ — $4x^4 + 3x^3 + 2x^2 + x$
5. _____ — $a^2 + b^2$

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Terms: Degree and Coefficient

AB-WAP 2

Instructions: For each polynomial below, circle the term of the specified degree and then write the coefficient of that term in the space provided.

1. 3rd degree $5x^4 - 8x^3 + x^2 + 10x - 15$ Coefficient -8
2. 2nd degree $a^3 + a^2 + 3$ Coefficient _____
3. 4th degree $21x^8 + 16x^6 + 11x^4 + 6x^2 + 1$ Coefficient _____
4. 1st degree $-6x^4 + 4x^3 + 2x^2 - x + 1$ Coefficient _____
5. 6th degree $-x^4 + 7x^6 + 14x^3 - 9x + 10$ Coefficient _____
6. 5th degree $-a + 7a^2 + 14 - 5a^5 + 10a^2$ Coefficient _____
7. 2nd degree $b^4 + 2b^3 + 3b^2 + 4b + 5$ Coefficient _____
8. 1st degree $-3x^7 + 9x^5 - 4x^3 - 6x + 1$ Coefficient _____
9. 4th degree $-x^2y^2 + xy^2 + yx - x + y - 2$ Coefficient _____
10. 3rd degree $5xy^4 - 5xy^3 + 5xy^2 - 5xy$ Coefficient _____
11. 3rd degree $a^3b^3c^3 + a^2b^2c^2 + abc$ Coefficient _____
12. 2nd degree $10xy + 4x^2y + 6xy^2 + 3x^2y^2$ Coefficient _____

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Re-arranging Polynomials

AB-WAP 3

Instructions: Re-arrange each polynomial so that its terms are in order from highest degree to lowest degree. (Be sure to move the negative sign along with any negative terms that you move.)

1. $5x - 9 - x^3 + 10x^2$ — $-x^3 + 10x^2 + 5x - 9$
2. $- x + 20 + 3x^2$ — _____
3. $12a^2 - 8a^4 - 4a^6$ — _____
4. $-7 + 4x + 2x^5 + x^3$ — _____
5. $4x - 8x^2 + 16$ — _____
6. $-a + a^2 - a^3 - a^5 + a^4$ — _____
7. $10 + 2b^3 + 3b$ — _____
8. $-3x^5 + 15 - 9x^3 - 4x$ — _____
9. $-5xy + xy^2 + x^2y^2 + 2y$ — _____
10. $ab - abc + a^2bc - a$ — _____

math Antics Exercises

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What Are Polynomials?

1 Fill in the blank.

The number part of a term is called the _____ .

2 Fill in the blank.

If a term in a polynomial only has a number part, it's called a _____ term.

3 How many terms does this polynomial have?

$5x^3 - x^2 + 5x - 8$

_____

4 Write the degree of each of these terms in the blank next to it.

$3x^2$ ___

$10x$ ___

$6x^3$ ___

x^2y^2 ___

5 What is the coefficient of the 3rd degree term in this polynomial?

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

_____

6 What is the coefficient of the 2nd degree term in this polynomial?

$x^2 + 2x - 5$

_____

7 What is the degree of this polynomial?

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

_____

8 What is the degree of this polynomial?

$4xy - 3y + 8$

_____

9 Re-arrange this polynomial so its terms are in order from highest to lowest.

$5x + 2x^3 - 15 - 7x^2$

10 Re-arrange this polynomial so its terms are in order from highest to lowest.

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

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Polynomials and Terms

AB-WAP 1

Instructions: How many terms does each polynomial have? Write your answer in the blank provided.

1. 3 — $4x^3 + 4x^2 + x$
2. 4 — $a^3 - 5a^2 + a + 7$
3. 5 — $7x^6 - 10x^3 + 9x^2 + 5x - 8$
4. 8 — $x^8 + x^7 + x^6 + x^5 + x^4 + x^3 + x^2 + x$
5. 9 — $x^8 + x^7 + x^6 + x^5 + x^4 + x^3 + x^2 + x + 1$
6. 1 — $12b^2$
7. 6 — $xy - 5 + 9x^5 + 3x - 6x^2y - 25x^4$
8. 5 — $7x^2 - 10 + 5x - 8x^3 - x^4$
9. 7 — $5a^3 - b^2 + 5c - 8a + 12 + b + c$
10. 2 — $x - 1$

Instructions: Based on the number of terms, classify each of the following as a monomial, binomial, trinomial or polynomial.

1. binomial — $2x - 5y$
2. trinomial — $6x^2 - x + 4$
3. monomial — $7x^6$
4. polynomial — $4x^4 + 3x^3 + 2x^2 + x$
5. binomial — $a^2 + b^2$

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Terms: Degree and Coefficient

AB-WAP 2

Instructions: For each polynomial below, circle the term of the specified degree and then write the coefficient of that term in the space provided.

1. 3rd degree $5x^4 - 8x^3 + x^2 + 10x - 15$ Coefficient: -8
2. 2nd degree $a^3 + a^2 + 3$ Coefficient: 1
3. 4th degree $21x^8 + 16x^6 + 11x^4 + 6x^2 + 1$ Coefficient: 11
4. 1st degree $-6x^4 + 4x^3 + 2x^2 - x + 1$ Coefficient: -1
5. 6th degree $-x^4 + 7x^6 + 14x^3 - 9x + 10$ Coefficient: 7
6. 5th degree $-a + 7a^2 + 14 - 5a^5 + 10a^2$ Coefficient: -5
7. 2nd degree $b^4 + 2b^3 + 3b^2 + 4b + 5$ Coefficient: 3
8. 1st degree $-3x^7 + 9x^5 - 4x^3 - 6x + 1$ Coefficient: -6
9. 4th degree $-x^2y^2 + xy^2 + yx - x + y - 2$ Coefficient: -1
10. 3rd degree $5xy^4 - 5xy^3 + 5xy^2 - 5xy$ Coefficient: 5
11. 3rd degree $a^3b^3c^3 + a^2b^2c^2 + abc$ Coefficient: 1
12. 2nd degree $10xy + 4x^2y + 6xy^2 + 3x^2y^2$ Coefficient: 10

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Re-arranging Polynomials

AB-WAP 3

Instructions: Re-arrange each polynomial so that its terms are in order from highest degree to lowest degree. (Be sure to move the negative sign along with any negative terms that you move.)

1. $5x - 9 - x^3 + 10x^2$ → $-x^3 + 10x^2 + 5x - 9$
2. $-x + 20 + 3x^2$ → $3x^2 - x + 20$
3. $12a^2 - 8a^4 - 4a^6$ → $-4a^6 - 8a^4 + 12a^2$
4. $-7 + 4x + 2x^5 + x^3$ → $2x^5 + x^3 + 4x - 7$
5. $4x - 8x^2 + 16$ → $-8x^2 + 4x + 16$
6. $-a + a^2 - a^3 - a^5 + a^4$ → $-a^5 + a^4 - a^3 + a^2 - a$
7. $10 + 2b^3 + 3b$ → $2b^3 + 3b + 10$
8. $-3x^5 + 15 - 9x^3 - 4x$ → $-3x^5 - 9x^3 - 4x + 15$
9. $-5xy + xy^2 + x^2y^2 + 2y$ → $x^2y^2 + xy^2 - 5xy + 2y$
10. $ab - abc + a^2bc - a$ → $a^2bc - abc + ab - a$

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Exercises

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What Are Polynomials?

1 Fill in the blank.

The number part of a term is called the coefficient .

2 Fill in the blank.

If a term in a polynomial only has a number part, it's called a constant term.

3 How many terms does this polynomial have?

$5x^3 - x^2 + 5x - 8$

4

4 Write the degree of each of these terms in the blank next to it.

$3x^2$ 2 or 2nd

$10x$ 1 or 1st

$6x^3$ 3 or 3rd

x^2y^2 4 or 4th

5 What is the coefficient of the 3rd degree term in this polynomial?

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

-2

6 What is the coefficient of the 2nd degree term in this polynomial?

$x^2 + 2x - 5$

1

7 What is the degree of this polynomial?

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

5 or 5th

8 What is the degree of this polynomial?

$4xy - 3y + 8$

2 or 2nd

9 Re-arrange this polynomial so its terms are in order from highest to lowest.

$5x + 2x^3 - 15 - 7x^2$

$2x^3 - 7x^2 + 5x - 15$

10 Re-arrange this polynomial so its terms are in order from highest to lowest.

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

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

See Video for step-by-step solutions to each problem.