What do you see?

$12x$

$8x^2y^2$

$20xy^4$

$16y^4$

Could 8 fit into this group?

$12x$

$8x^2y^2$

$20xy^4$

$16y^4$

How can you rewrite “8” so it looks like the rest of the group without changing the value?

(can you write it with a variable?)

This group has a name!

Monomial - a real number, a variable, or a product of a real number and one or more variables with whole-number exponents

Examples: $3x$, 7, $2xy^2$

Is $\sqrt{x}$ a monomial?

How about $\frac{1}{p^2}$

Ready…set…go!

Find 2 monomials that can be added together?

Ready…set…go!

Find ***two monomials*** whose ***sum*** is $24x^5$

Ready…set…go!

Keith gave an answer of $12x^2$ and $12x^3$

Is he correct?

Convince me!

Ready…set…go!

Keith is crying.
He really thinks he is correct.

Can you figure out what he is doing to get his answer?

Ready…set…go!

Can you find two examples that cannot be combined?

Ready…set…go!

Look at all the solutions!

What do you see?

Let's Give These A Name!

Binomial – The sum or difference of two monomials (it has two unlike terms which cannot be combined)
Examples: $3x^2 + 5x$, $7y + 2$

$3x^2$ and $5x$ have a special name.

What is that special name?

Term: product of a number and/or variables

Create an expression with 3 terms.

Ex: $4x^3 + 6x^2 + 1$

Can you guess what a three term expression is called?

Trinomial – The sum or difference of three monomials (it has three unlike terms which cannot be combined)
Examples: $3x^2 + 5x + 1$, $7xyz + 2x + 8z$

In the expression $3x^2 + 5x + 1$, the exponent "2" has a special name.

What do we call the 2?

Degree:
largest exponent

$9x^5 + 5x^3 – 3x + 1$ has a degree of…?

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What do you see?

Kit Kat, Twix, Snickers,
Almond Joy,
3 Musketeer

What do you see?

Mom, Step Dad, Brother, Aunt, Granny, Uncle Billy, Step Sister

What do you see?

$8x^5$

$9x+4y^2$

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$2x^2+6x+6$

POLYNOMIALS!

Polynomial - a monomial or the sum or difference of monomials.

Polynomials have whole number exponents.

Determine which of the following would be considered a polynomial. If yes, state the degree. If no, state the reason.

a) $-3 + 4x - 3.5x^2 + \frac{5}{9}x^3$

b) $5p^4 + 3.5p - \frac{4}{p^2} + 16$

c) $4\sqrt{x^3} + 12$

d) $x^2\sqrt{15} - x - 4^{-2}$

Answers

a) $-3 + 4x - 3.5x^2 + \frac{5}{9}x^3$

Yes, Degree 3

b) $5p^4 + 3.5p - \frac{4}{p^2} + 16$

No, negative exponent

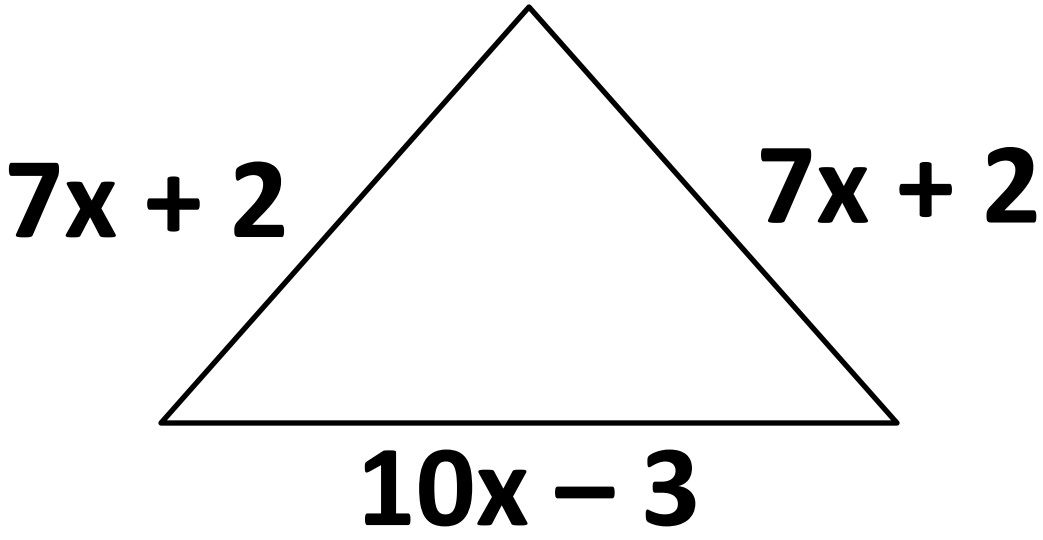
c) $4\sqrt{x^3} + 12$

No, fractional exponent

d) $x^2\sqrt{15} - x - 4^{-2}$

Yes, Degree 2

Here is a picture. What is the question?



Megan has $3x+9$ pennies and Jordan has $2x+4$ pennies.

How many more pennies does Megan have than Jordan?

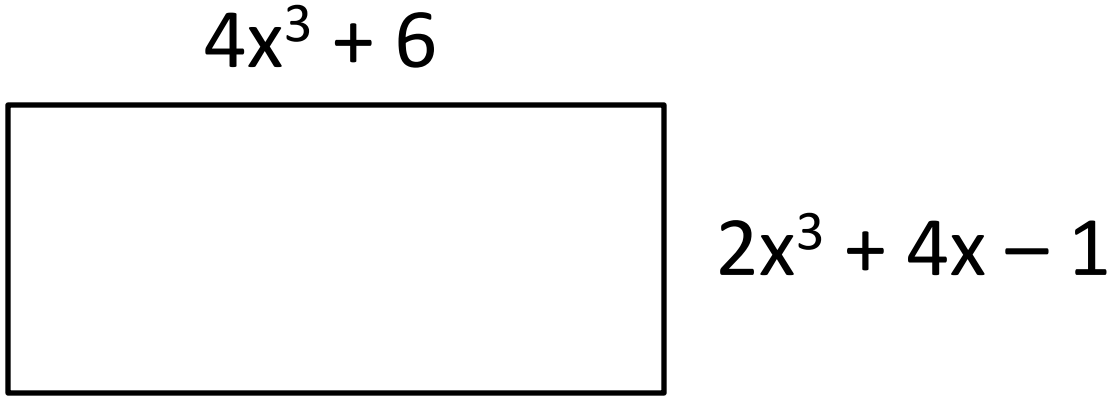
$x + 5$

Megan has 3x+9 pennies and Jordan has 2x+4 pennies.

What if they combine their pennies? **5x + 13**

Did we get it?

1. Find two monomials whose difference is $10x^3$
2. Find two monomials whose difference is NOT a monomial
3. What polynomial added to $7x^3 + 2$ equals $10x^3 - 4$?
4. Find the perimeter and area of the figure:



Answers

1. $13x^3 – 3x^3$ (possible answer)
2. $-4p^3 – 5p^7$ (possible answer)
3. $3x^3 – 6$
4. Perimeter: $12x^3 + 8x + 10$

   Area: $8x^6 + 16x^4 + 8x^3 + 24x - 6$

What is so special about a 2^{nd} degree polynomial??

Lesson One Study Guide