Adding and Subtracting Polynomials

Adding Polynomials

Step 1: Group like terms together

* same variable
* same exponent

Step 2: Simplify

* Combine like terms

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

$3x^2 + x + 2$

2. $(5x - 3x^2 + 1) + (-6 + x^2 - 2x)$

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

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

$x^2 + 2x - 2$

4. $(2 - x^2 + x) + (x^2 - 2x + 4)$

$-x + 6$

Subtracting Polynomials

Step 1: Distribute the subtraction sign to the ( ) after it.

ADD

Step 2: Group like terms

Step 3: Simplify

* Combine like terms

5. $(3a^2 + 10a) - (8a^2 - a)$

$3a^2 + 10a - 8a^2 + a$ DISTRIBUTED NEGATIVE SIGN

$-5a^2 + 11a$

6. $(3x^2 + 2x - 4) - (2x^2 + x - 1)$

$3x^2 + 2x - 4 - 2x^2 - x + 1$

$x^2 + x - 3$

7. $(7x - 3) - (9x - 2)$

$7x - 3 - 9x + 2$

$-2x - 1$

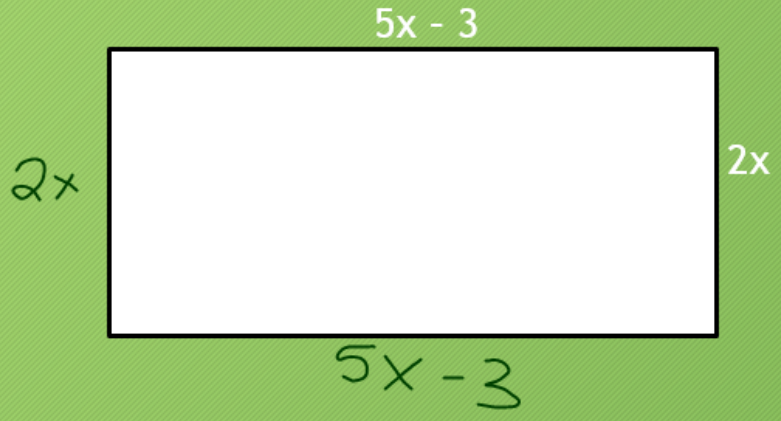
8. $(2x^2 - 4x + 4) - (-2x^2 - 5x + 4)$

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

$4x^2 + x$

Application Problems

Find the perimeter of the rectangle below



PERIMETER: ADD ALL THE SIDES

$5x - 3$
$2x$
$5x - 3$
$+ \quad 2x$
$P = 14x - 6$

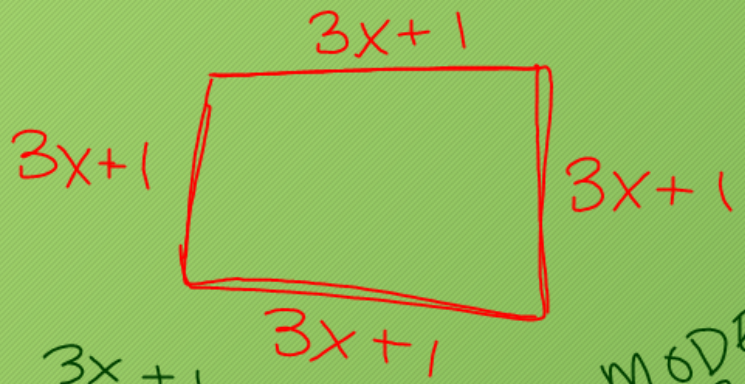
$P = 14(3) - 6 = 36 ft$

What is the perimeter if $x = 3$ ft

Application Problems

Faris is building a sandbox in his backyard for his son. It is going to be a square. One side length is 3x + 1. What is the model for the perimeter of the sandbox? How much would he need to buy to make the sandbox frame if x = 5? ft

EQUATION



SINCE WE WANT TO KNOW THE FRAME (OUTSIDE). WE USE PERIMETER

AREA WOULD BE HOW MUCH SAND TO BUY (INSIDE)

3x + 1
3x + 1
3x + 1
3x + 1
12x + 4 = P

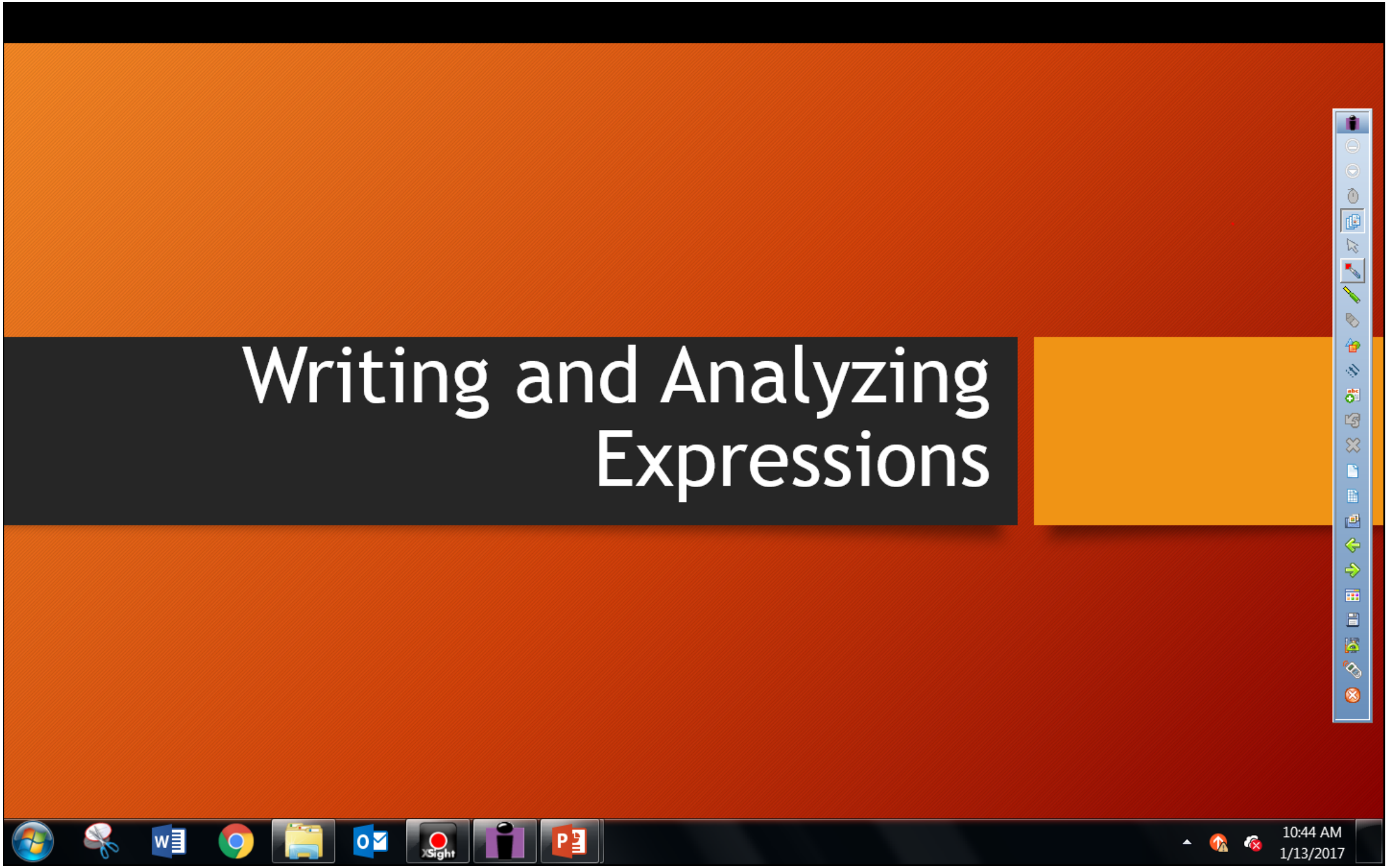
MODEL FOR PERIMETER

So IF X = 5

P = 12x + 4

P = 12(5) + 4

P = 64 ft


Writing and Analyzing Expressions
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Example 1)

It costs $20 per hour to bowl and $3 for shoe rental.

EQUATION means you must have =

a) Write an expression that models this situation.

$y = 20x + 3$

PAID

HOURS

b) How much would it cost to bowl for 3 hours?

$y = 20(3) + 3$

$y = 63$

$63

Example 2)

Gamefly charges a one time set up fee and then charges monthly. It can be modeled by the equation y= 4.99x + 10.50.

a) What does 4.99 represent?

MONTHLY COST

b) What does 10.50 represent?

ONE-TIME SET UP FEE

c) What does x represent?

MONTHS

d) What does y represent?

MONEY! HOW MUCH YOU SPENT

Example 3)
Nancy sold brownies and cupcakes at the bake sale. Brownies were sold for a dollar and cupcakes were sold for $2.50. She made a total profit of $31.50 and her profit can be modeled by the expression $b + 2.5c = 31.50$. If she sold 7 cupcakes how many brownies did she sell?

$b + 2.5(7) = 31.50$

$b + 17.5 = 31.50$

$-17.5 \quad -17.5$

$b = 14$ BROWNIES


Precision and Accuracy
Analyze and compare measurements for precision and accuracy.
Choose an appropriate level of accuracy when reporting measurements.
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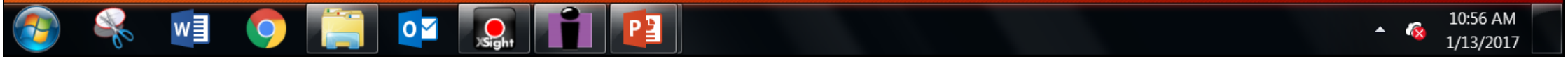
Vocabulary:

- Precision: the level of detail in a measurement. It is determined by the smallest unit or fraction of a unit that you can reasonably measure. **DOES NOT MEAN CORRECT!**
- Accuracy: the closeness of a measure value to the actual or true value. **Smallest amount of error from true value.**
- Tolerance: describes the amount by which a measurement is permitted to vary from a specified value.



Comparing Precision of Measurements

Choose the more PRECISE measurement:

A. 0.8 km; 830.2 m

BECAUSE METERS ARE SMALLER THAN KM

B. 2.45 in; 2.5 in

2.45 BECAUSE IT GOES TO THE HUNDREDTH PLACE NOT JUST THE TENTH SPACE

C. 100 cm; 1 m

CM ARE SMALLER THAN METERS

Comparing Precision and Accuracy

Ida works in a deli. She is testing the scales at the deli to make sure they are accurate. She uses a weight that is exactly 1 pound and gets the following results:

Scale 1: 1.019 lb **Scale 2: 1.01 lb** **Scale 3: 0.98 lb**

$1 - 1.019 = .019$ $1 - 1.01 = .01$ $1 - .98 = .02$

Which scale is most PRECISE?

SCALE 1 BECAUSE IT MEASURES OUT TO THE THOUSANDTH PLACE

Which scale is most ACCURATE?

SCALE 2 BECAUSE IT IS THE CLOSEST TO 1 lb (BY ONLY .01 lbs OFF)