Warm UP

write 2 conditional statements from the biconditional statement.

You eat cheese pizza iff you ~~are~~ *then* not lactose intolerant.

If you can eat pizza ~~if~~ you are not lactose intolerant

If You are not lactose tolerant, ~~if~~. Then you eat pizza

7-2 Converse, Inverse, Contrapositive & Intro to Proofs

1. Given a conditional statement, I can write the converse, inverse, and contrapositive.

2. I can calculate angle measures of complementary and supplementary angles.

3. I can justify statements and give counterexamples.

The **converse** of a conditional statement is formed by switching your hypothesis and conclusion. $(q \rightarrow p)$

The **inverse** of a conditional statement is when you negate your hypothesis and conclusion. $(\sim p \rightarrow \sim q)$

The **contrapositive** of a conditional statement is when you switch and negate your hypothesis and conclusion. $(\sim q \rightarrow \sim p)$

Write the inverse, converse, and contrapositive of the conditional statement.

If she is made out of wood, then she is a witch.

Converse: If she's a witch Then she's made of wood

Inverse: not made of wood then not a witch

Contrapositive: If not a witch then not made of wood

Write the inverse, converse, and contrapositive of the conditional statement.

If you are a Caveman, then you are awesome.

Converse: If you're awesome Then you're a caveman

Inverse: If you're not a caveman Then you're not awesome

Contrapositive: If you're not awesome Then you're not a caveman

Write the inverse, converse, and contrapositive of the conditional statement.

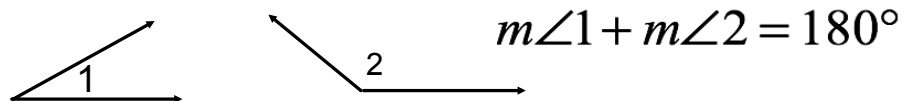If a polygon is a square, then it is a rectangle.

Converse: if it's a rectangle, Then the Polygon is a Square

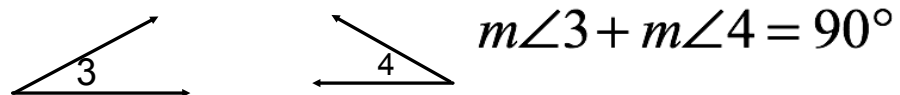**Inverse:** If a polygon isn't a square then it isn't a rectangle.

Contrapositive: If its not a rectangle, then a polygon is not a square

Vocab: (write and draw a picture for each pair of angles in your vocab book)
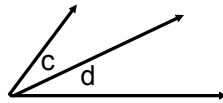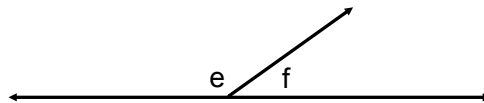
Supplementary angles: two angles that sum to 180°.

$$m\angle 1 + m\angle 2 = 180°$$

1   2

Complementary angles:two angles that sum to 90°.
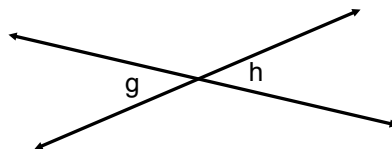
$$m\angle 3 + m\angle 4 = 90°$$

3   4

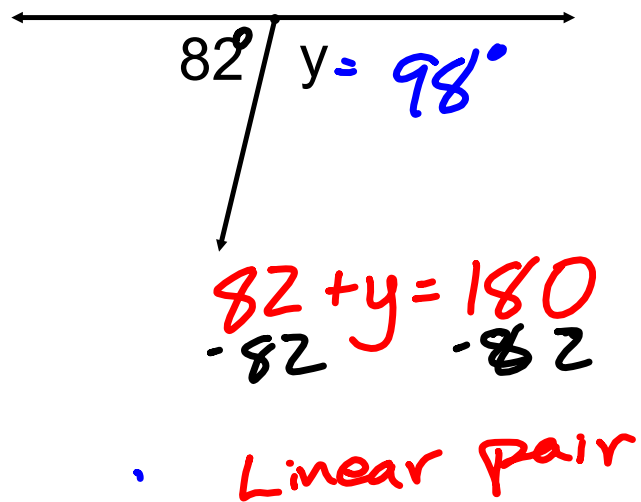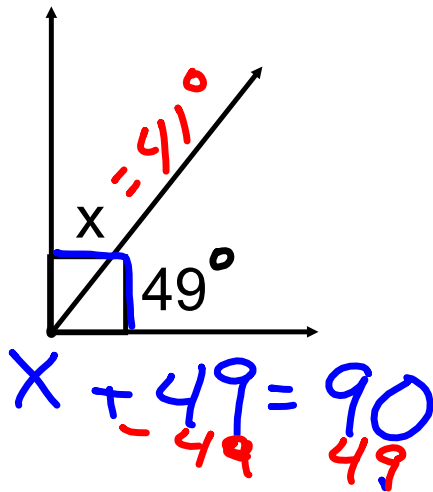Adjacent angles: any two angles that share a side.

c   d

Linear pair: any two adjacent angles that form a line.

e   f

Vertical angles: when two lines intersect Vertical Angles are the nonadjacent angles.

g   h

Solve for the missing angle. Explain your reasoning.

$x = 41°$

x

$49°$

$X + 49 = 90$
$-49 \quad 49$

$82°$ $y = 98°$

$82 + y = 180$
$-82 \qquad -82$

Linear pair

Give a counterexample to prove the statement is False.

1. All round shapes are circles.

   false, oval

2. All quadratic polynomials can be factored.

   false, $x^2 + 7x + 2$

3. A quadratic function has a range of $(-\infty, \infty)$

   ↺ FALSE