

Journal: 8/20/15

$$x = 180 - z$$

↑  
supp

70°

1. A particular angle measures 😎 degrees. What is the measure of its supplement?  $180^\circ - 70^\circ = 110^\circ$

$$\boxed{\text{☹}} + 180 - \text{😎} = 180^\circ$$

2. Angle X has a measure that is half the measure of its complement. What is the measure of Angle X?

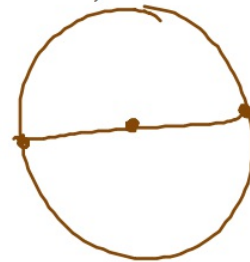
$$\frac{90^\circ}{3} = 30^\circ$$

30°

$$x + 2x = 90^\circ$$

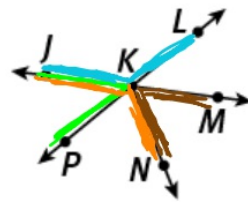
$3x = 90$

3. True or False (with explanation) - All chords are diameters.



Homework Solutions (red pen for corrections in supply box)

- a. chord
- b. radius
- c. radius
- d. radius
- e. radius
- f. chord, diameter



- 13.  $\angle JKL$  and  $\angle PKM$
- 14. They cannot. Two obtuse angles would sum to be more than 90.

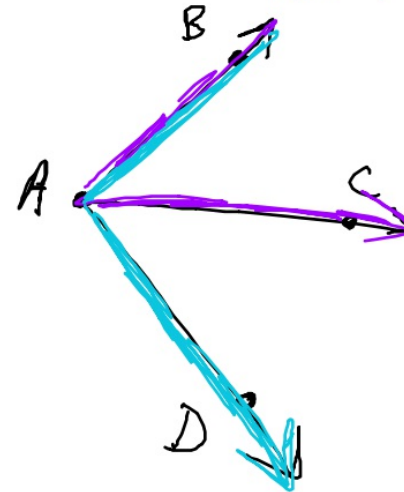
*adjacent = next to*

- 15. It is possible.  $\angle BAC$  and  $\angle BAD$  are not 'attached'.

*non-adjacent*

(possible answer)

- 12. (1)  $\angle JKP$  and  $\angle JKL$
- (2)  $\angle JKN$  and  $\angle NKM$
- (3)  $\angle PKN$  and  $\angle NKL$



# Deductive and Inductive Reasoning: Two ways to think p.13

Words to know:

-axiom  $\Rightarrow$  a simple assumption

-conjecture p.13: an educated guess

-proof  $\rightarrow$  arrived at by inductive reasoning.

-theorem a system of logic

-hypothesis and reasoning to find new knowledge.

a proven fact  
(arrived at by deductive reasoning.)

the stated conditions  
of a theorem.

Inductive Reasoning

Conjecture

Deduction/Logic (Proof)

Theorem

Hypothesis  $\rightarrow$  Conclusion



## Inductive or Deductive?

R

L

1. Kim knows that 3, 5, 7, 11, and 13 are prime numbers. From this, she concludes that all prime numbers are odd.

*Inductive*  $\Rightarrow$



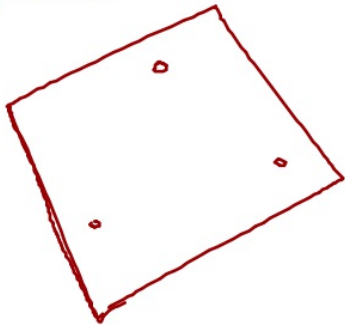
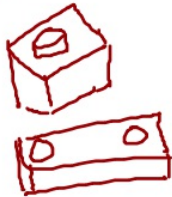
2. Kanye knows that all rectangles have four right angles. He also knows that figure KING is a rectangle. He concludes that KING must have four right angles: K, I, N, and G.

*Deductive: a proven conclusion.  
arrives at*

p 25

Axioms:

- point
- line
- plane



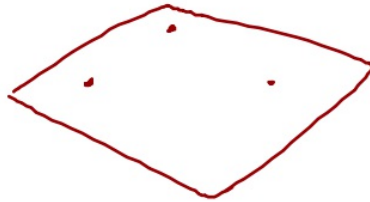
ray

→ a one-directional line with 2 pts.

collinear points  
Same line point



coplanar points  
Same plane point

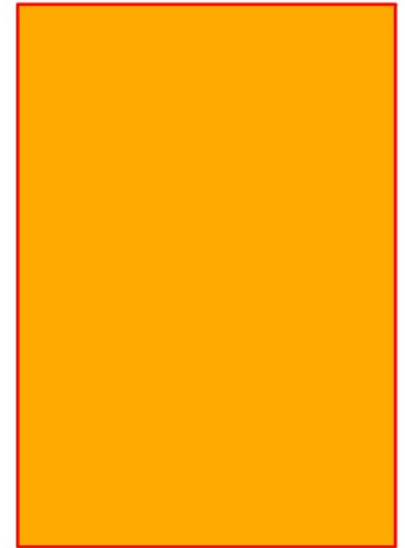


angle



complementary angles

supplementary angles



Two-Column Proof: Love 'em or Hate 'em

p27

algebraic example

**Given:**  $\frac{x-3}{2} = \frac{6+x}{5}$       **Prove:**  $x = 9$

<u>Statement</u>	<u>Reason</u>
1. $\frac{x-3}{2} = \frac{6+x}{5}$	1. given
2. $10\left(\frac{x-3}{2}\right) = \left(\frac{6+x}{5}\right)10$	2. Multiplication prop. of Eq.
3. $5(x-3) = 2(6+x)$	3. Division Prop.
4. $5x-15 = 12+2x$	4. Distributive Property.
5. $3x-15 = 12$	5. Subt. Prop.
6. $3x = 27$	6. Addition
7. $x = 9$	7. <del>Divided</del> Property - Division Prop.

<sup>P29</sup>  
Conditional Statements : if  $\rightarrow$  then

From the previous proof, we now know (not presume) and state that:

If two angles are vertical angles, then...



ex: I'll bring an umbrella if it might rain.

Conclusion - Hyp

Homework:

- p. 28: 7, 10, 11
- p. 30: 4, 5, 7, 8, 11

Assessment on Monday!

Look over homework/notes to study.