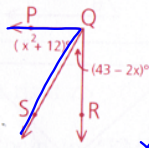


Mental Floss - Friday Nov 4th

Given: $PQ \perp QR$
Find: $m\angle PQS$



$$x^2 + 12 + 43 - 2x = 90$$

$$x^2 - 2x - 35 = 0$$

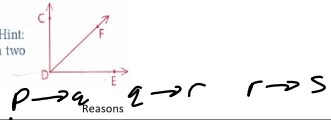
$$(x - 7)(x + 5) = 0$$

$$x = 7, -5$$

$x^2 + 12$
 $x = 7$ $x = -5$
 61° or $(-5)^2$
 29 or 37
~~8~~



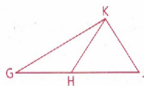
7 Given: $\overleftrightarrow{CD} \perp \overleftrightarrow{DE}$
Prove: $\angle CDF$ is comp. to $\angle FDE$. (Hint: This proof takes more than two steps.)



- Statements
- $\overleftrightarrow{CD} \perp \overleftrightarrow{DE}$
 - $\angle CDE$ is a rt. angle
 - $\angle CDF$ comp. $\angle FDE$

- Reasons
- GIVEN
 - IF 2 LINES ARE PERP., THEN THEY FORM RT. ANGLES.
 - IF 2 ANGLES ADD TO FORM A RT. ANGLE, THEN THEY ARE COMP.

8 Given: Diagram as shown
Prove: $\angle GHK$ is supp. to $\angle KHJ$.



Statements	Reasons
A) DIAGRAM AS SHOWN	A) GIVEN
B) $\angle GHK$ STRAIGHT ANGLE	B) ASSUMED FROM DIAGRAM
1.) $\angle GHK$ SUPP. $\angle KHJ$	1.) IF 2 ANGLES FORM A STRAIGHT ANGLE, THEN THEY ARE SUPP.

- ALLOWED TO ASSUME
- STRAIGHT ANGLES
 - VERTICAL ANGLES
 - SUPP. ANGLES

19 One of two complementary angles added to one-half the other yields 72° . Find half the measure of the larger.

$$x + \frac{1}{2}(90 - x) = 72$$

$$x + 45 - \frac{1}{2}x = 72$$

$$2 \cdot \frac{1}{2}x = \frac{27}{\frac{1}{2}} \cdot 2$$

$$x = 54$$

18.3
18.2

$$\frac{1}{2} \cdot 54 = \boxed{27^\circ}$$

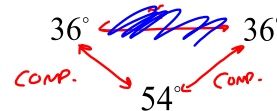
$$90 - x + \frac{1}{2}x = 72$$

$$-\frac{1}{2}x = -18$$

$$x = 36^\circ$$

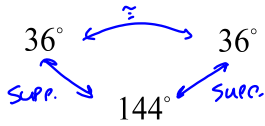
COMP = 54°

2.4 - Comp. and Supp. Angle Theorems



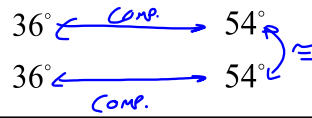
Thm: If two angles are comp to the same angle, then they are congruent.

EX: $\angle 1$ comp $\angle 2$
 $\angle 1$ comp $\angle 3$ Conclusion? $\angle 2 \cong \angle 3$



Thm: If two angles are supp to the same angle, then they are congruent.

Ex: $\angle A$ supp $\angle B$ Conclusion? $\angle A \cong \angle C$
 $\angle B$ supp $\angle C$



Thm: If two angles are comp/supp to congruent angles, then they are congruent.

Mental Floss: Mon, Nov 7th

Given: $m\angle MSO = (6x+18)^\circ$
 $m\angle KSE = (2x+9)^\circ$
 Find $m\angle OSE$

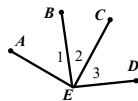
Handwritten notes:
 $2(6x+18) + 3(2x+9) = 180$
 $12x + 36 + 6x + 27 = 180$
 $18x + 63 = 180$
 $x = 6.5$
 $57 + 22 + 22 = 101^\circ$

2.4 - Comp. and Supp. Angle Theorems (4)

- If 2 angles are comp. to the same angle, then they are congruent.
- If 2 angles are supp. to the same angle, then they are congruent.
- If 2 angles are comp. to the congruent angles, then they are congruent.
- If 2 angles are supp. to the congruent angles, then they are congruent.

Example Proof #1

Given: $\overline{AE} \perp \overline{EC}$
 $\overline{BE} \perp \overline{ED}$
 Prove: $\angle 1 \cong \angle 3$



Statements	Reasons
1.) $\overline{AE} \perp \overline{EC}$	1.) Given
2.) $\overline{BE} \perp \overline{ED}$	2.) Given
3.) $\angle AEC$ RT. ANGLE	3.) IF 2 SEGMENTS ARE PERP., THEN THEY FORM RT. ANGLES
4.) $\angle BED$ RT. ANGLE	4.) SAME AS STEP 3.
5.) $\angle 1$ COMP. $\angle 2$	5.) IF 2 ANGLES FORM RT ANGLE, THEN THEY ARE COMP.
6.) $\angle 2$ COMP. $\angle 3$	6.) SAME AS STEP 5.
7.) $\angle 1 \cong \angle 3$	7.) IF 2 ANGLES COMP. TO SAME ANGLE, THEN THEY ARE \cong .