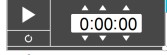
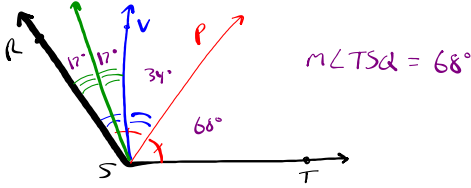


1.6 - Angle Relationships (Comp, Supp, Linear Pair, Vertical)

Mental Floss: Friday Sept 14th



56. **ANALYZING RELATIONSHIPS** \overrightarrow{SQ} bisects $\angle RST$, \overrightarrow{SP} bisects $\angle RSQ$, and \overrightarrow{SV} bisects $\angle RSP$. The measure of $\angle VSP$ is 17° . Find $m\angle TSQ$. Explain.



EXPLORATION 1 Finding Angle Measures

Work with a partner. The five-pointed star has a regular pentagon at its center.

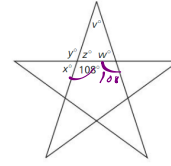
a. What do you notice about the following angle pairs?

x° and y° 180°
 y° and z° 180°
 x° and z° \cong

b. Find the values of the indicated variables. Do not use a protractor to measure the angles.

$x = 72^\circ$
 $y = 108^\circ$
 $z = 72^\circ$
 $w = 72^\circ$
 $v = 36^\circ$ *Tricky!*

Explain how you obtained each answer.

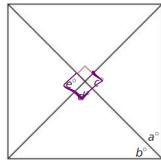


EXPLORATION 2 Finding Angle Measures

Work with a partner. A square is divided by its diagonals into four triangles.

a. What do you notice about the following angle pairs?

a° and b° \cong ? Add to 90°
 c° and d° $RT \angle s$
 c° and e° \cong



b. Find the values of the indicated variables. Do not use a protractor to measure the angles.

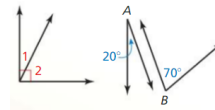
$c = 90^\circ$
 $d = 90^\circ$
 $e = 90^\circ$

Explain how you obtained each answer.

Complementary Angles

Two positive angles whose measures have a sum of 90°

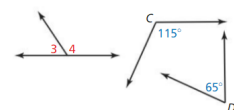
Each angle is the **complement** of the other.



Supplementary Angles

Two positive angles whose measures have a sum of 180°

Each angle is the **supplement** of the other.



Complementary angles and supplementary angles can be either adjacent angles or nonadjacent angles.

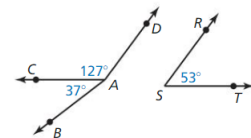
Adjacent Angles

- Share a common vertex
- Share a common side (shared ray)
- No common interior points (no overlap)



EXAMPLE 1 Identifying Pairs of Angles

In the figure, name a pair of complementary angles, a pair of supplementary angles, and a pair of adjacent angles.



Comp: $37^\circ + 53^\circ$
 Supp: $127^\circ + 53^\circ$
 Adj: $127^\circ + 37^\circ$