

# March 26, 2015 5th 6th

## Starter

① What is 18% of 40?    ② 35 is 75% of what?

$$\frac{n}{40} = \frac{18}{100}$$

$$\frac{100n}{100} = \frac{720}{100}$$

$$n = 7.2$$

$$\frac{35}{n} = \frac{75}{100}$$

$$\frac{75n}{75} = \frac{3500}{75}$$

$$n = 46.7$$

③ 48 is what percent of 64?

$$\frac{48}{64} = \frac{p}{100}$$

$$\frac{64p}{64} = \frac{4800}{64}$$

$$p = 75\%$$

©2015

## 3/26 Complementary / Supplementary Angles

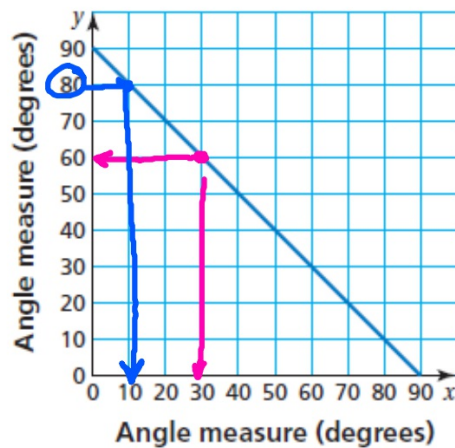
- a. The graph represents the measures of *complementary angles*. Use the graph to complete the table.

$x$	$10^\circ$	$20^\circ$	$25^\circ$	$30^\circ$	$45^\circ$	$50^\circ$	$75^\circ$
$y$	$80^\circ$	$70^\circ$	$65^\circ$	$60^\circ$	$45^\circ$	$40^\circ$	$15^\circ$

$90$     $90$     $90$     $90$     $90$     $90$     $90$

- b. How do you know when two angles are complementary? Explain.

They add up to  $90^\circ$



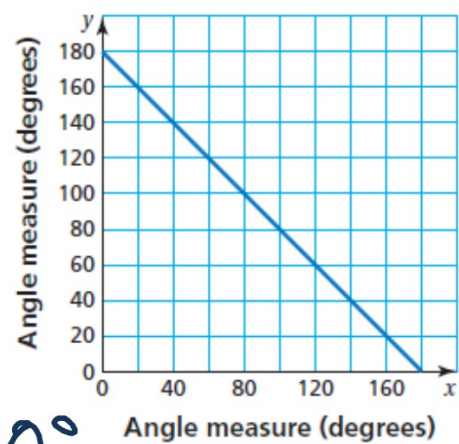
- c. The graph represents the measures of *supplementary angles*. Use the graph to complete the table.

x	20°	30°	60°	90°	130°	140°	150°
y	160°	150°	120°	90°	50°	40°	30°

180
180
---
---
---
---
---

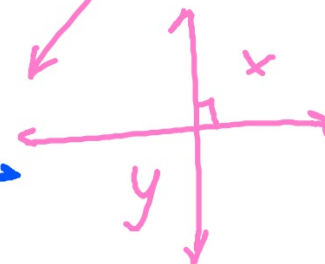
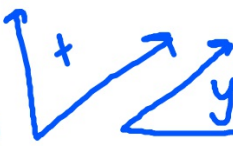
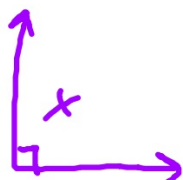
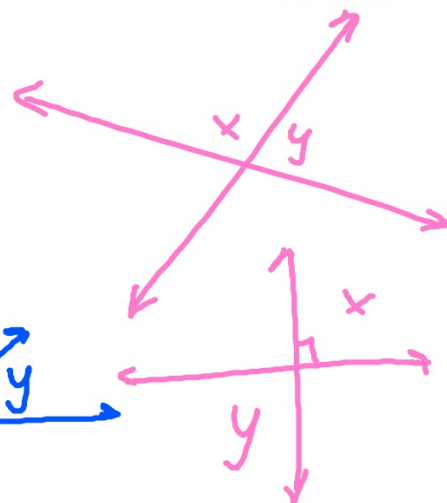
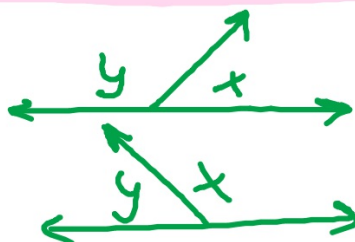
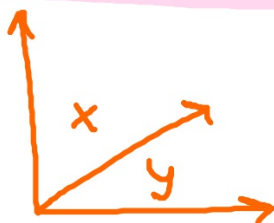
- d. How do you know when two angles are supplementary? Explain.

They add up to 180°



Work with a partner. Copy and complete each sentence with always, sometimes, or never.

- a. If  $x$  and  $y$  are complementary angles, then both  $x$  and  $y$  are always acute.
- b. If  $x$  and  $y$  are supplementary angles, then  $x$  is sometimes acute.
- c. If  $x$  is a right angle, then  $x$  is never acute.
- d. If  $x$  and  $y$  are complementary angles, then  $x$  and  $y$  are sometimes adjacent.
- e. If  $x$  and  $y$  are supplementary angles, then  $x$  and  $y$  are sometimes vertical.




Work with a partner. Tell whether the two angles shown on the clocks are complementary, supplementary, or neither. Explain your reasoning.

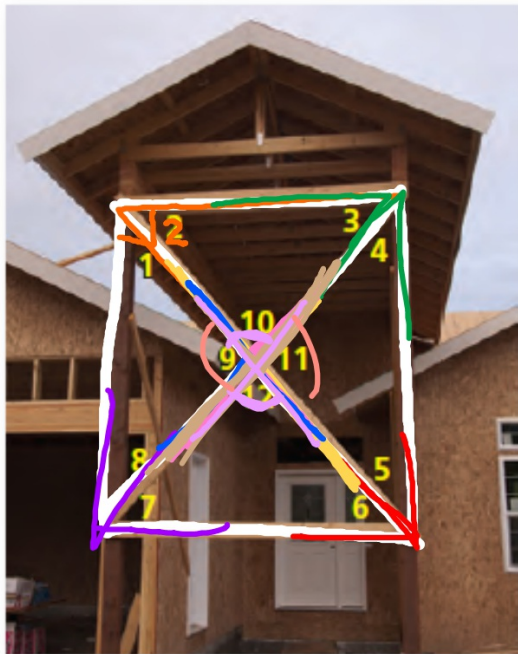
a.  *Supp.*

b.  *Comp*  
*7 1/2 min* *7 1/2 min*  
*15 min*

c.  *Neither*  
*180°*  
*= 270°*

d.  *Supp*  
*15 min* *15 min*  
*= 180°*

Name four pairs of complementary angles and four pairs of supplementary angles.



- ①  $\angle 2$  and  $\angle 1$       ①  $\angle 10 + \angle 11$   
 ②  $\angle 4$  and  $\angle 3$       ②  $\angle 11 + \angle 12$   
 ③  $\angle 8 + \angle 7$       ③  $\angle 9 + \angle 12$   
 ④  $\angle 5 + 6$       ④  $\angle 9 + \angle 10$

Name two pairs of vertical angles.

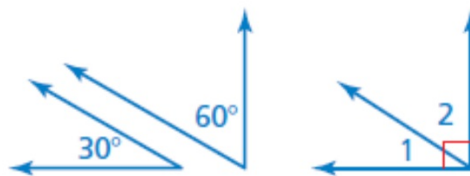
- ①  $\angle 10 + \angle 12$   
 ②  $\angle 9 + \angle 11$



### Complementary Angles

**Words** Two angles are **complementary angles** when the sum of their measures is  $90^\circ$ .

**Examples**



$\angle 1$  and  $\angle 2$  are complementary angles.

### Supplementary Angles

**Words** Two angles are **supplementary angles** when the sum of their measures is  $180^\circ$ .

**Examples**

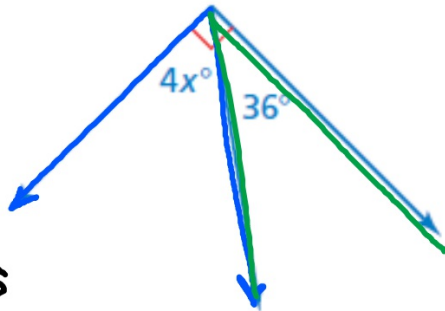


$\angle 3$  and  $\angle 4$  are supplementary angles.

Tell whether the angles are *complementary* or *supplementary*.  
Then find the value of  $x$ .

Comp!

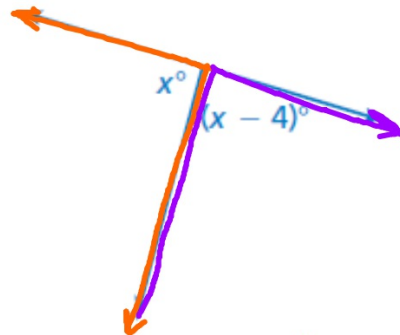
a.



$$\begin{array}{r} 47 \\ 5 \overline{) 235} \\ \underline{20} \phantom{0} \\ 35 \\ \underline{30} \phantom{0} \\ 50 \\ \underline{50} \\ 0 \end{array}$$

$$\begin{array}{r} 4x + 36 = 90 \\ - 36 \quad - 36 \\ \hline x = \frac{54}{4} \\ x = 13.5 \end{array}$$

b.



$$\begin{array}{r} 1x + 1x - 4 = 180 \\ 2x - 4 = 180 \\ + 4 \quad + 4 \\ \hline 2x = 184 \\ \frac{2x}{2} = \frac{184}{2} \\ x = 92 \end{array}$$



Homework

Due