

# homework 8-6 through 8-12

**8-6**

a)  $x = 110^\circ$

b)  $x = 70^\circ$

c)  $x = 48^\circ$

d)  $x = 108^\circ$

**8-7**

a) No      b) yes      c) no      d) yes

e) No      f) yes      g) yes      h) no

**8-8**

a) the exterior angle is equal to the sum of the non-adjacent angles

b) The exterior angle is equal to the sum of the remote interior angles.

c)  $a + b + c = 180^\circ$       Triangle Sum  
 $x + c = 180^\circ$       straight angle pair  
 $a + b + c = x + c$       substitution  
 $a + b = x$



8-9

$$5x = 360$$

$$x = 72^\circ$$

$$y = 54^\circ$$

$$\frac{180}{-72}$$
$$\frac{108}{2} = 54$$

8-10

$$\frac{360}{15} = 24$$

24 triangles

8-11

a) SAS  $\cong$

$$x = 79^\circ$$

b) ~~AA~~

cannot be determined

c) AAS  $\cong$

$$8 \quad 8\sqrt{3}$$

$$8\sqrt{3} - 8 \approx 5.86$$

transitive

d) SAS  $\cong$

$$\tan^{-1}\left(\frac{9}{5}\right) = \theta$$

$$\theta \approx 60.95^\circ$$

$$\cos 30 = \frac{y}{16}$$

$$\sin 30 = \frac{w}{16}$$

$$y = \frac{16 \cos 30}{1} = 13.86$$

$$w = 8$$
$$x \approx 5.86$$



8-12

a) true

b) False Kite, trapezoid

c) true

d) true

e) False rhombus, rectangle