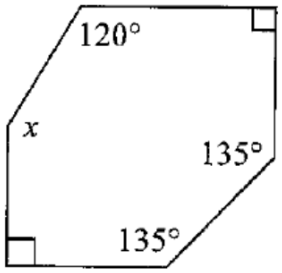
Find the value of x $S = 180(n-2)$

1.



$S = 180(6-2)$

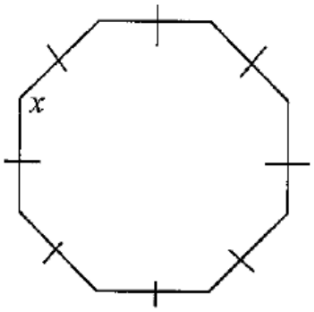
$= 720$

$x + 120 + 90 + 135 + 135 + 90 = 720$

$x + 570 = 720$

$x = 150$

2.



$S = 180(n-2)$

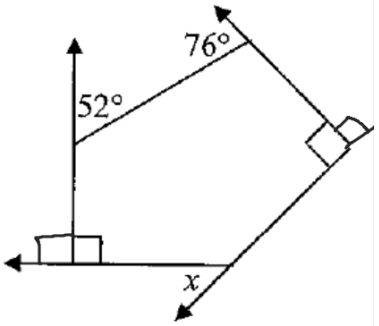
$= 180(8-2)$

$= 1080$

$x = \frac{1080}{8}$

$x = 135$

3.



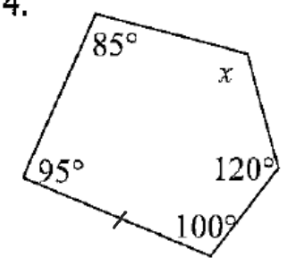
$90 + 52 + 76 + 90 + x = 360$

$x + 308 = 360$

$x = 52$

Find the value of x

4.



$S = 180(n-2)$

$S = 180(5-2)$

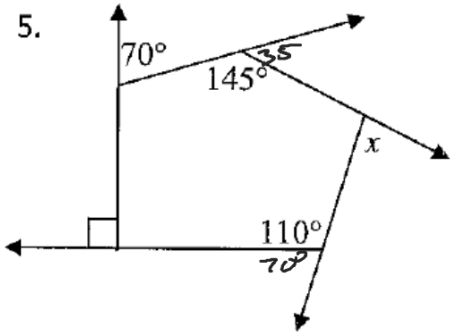
$= 540$

$540 = 85+95+x+120+100$

$540 = x+400$

$x = 140$

5.

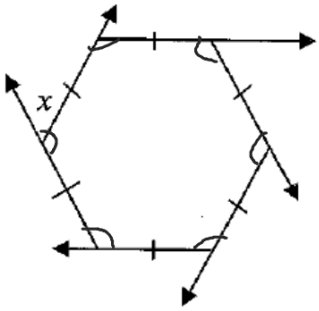


$x + 70 + 90 + 70 + 35 = 360$

$x + 265 = 360$

$x = 95$

6.



$\frac{360}{6} = 60°$

8. If the sum of the interior angles of a polygon is 5040°, then the polygon has how many sides?

$$S = 180(n-2)$$

$$\frac{5040}{180} = \frac{180(n-2)}{180}$$

$$28 = n-2$$

$$+2 \quad +2$$

$$n = 30$$

9. The measure of each interior angle of a regular polygon is 144°. How many sides does the polygon have?

Interior ∠

$$n\left(\frac{180(n-2)}{n}\right)=(144)n$$

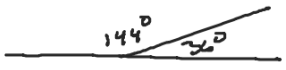
$$180(n-2)=144n$$

$$180n-360=144n$$

$$-360=-36n$$

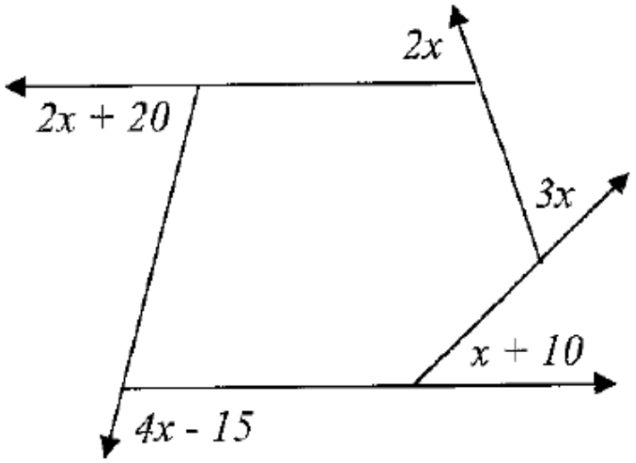
$$n=10$$

Exterior ∠



$$\frac{360}{36}=10$$

12. Find the value of x.



$12x + 15 = 360$

$12x = 345$

$x = 28.75$

15. A convex heptagon has interior angles that measure 120°, 115°, 135°, 95°, 155°, and 125°. What is the measure of the seventh interior angle?

$S = 180(7-2)$

$= 900$

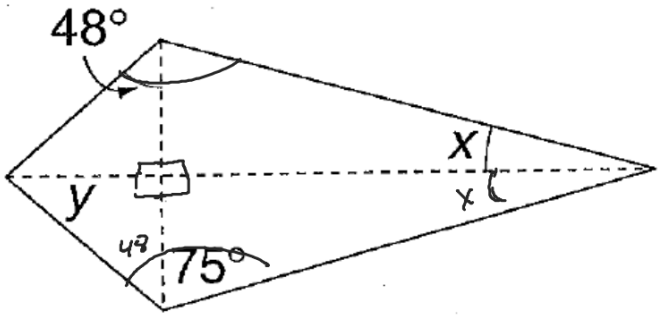
$900 = x + 745$

$x = 155$

120
115
135
95
155
125
745

The figures in Problems 1 and 2 are kites. Find x and y for each.

1.



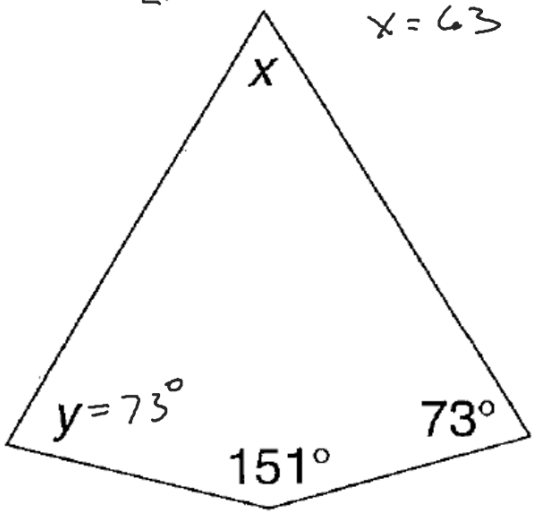
$x =$ 15° $y =$ 42°

2.

146
151
297

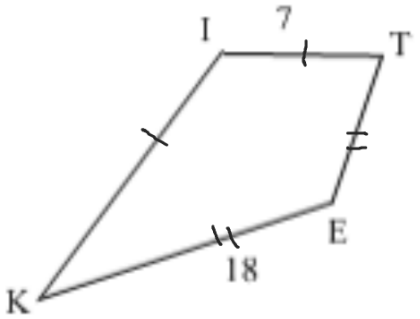
$x + 297 = 360$

$x = 63$



$x =$ _____ $y =$ _____

6. Find the perimeter of kite KITE.

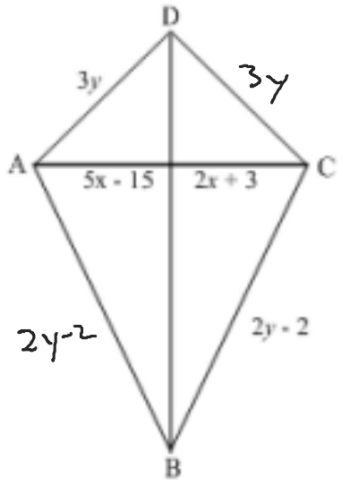


$P = IT + TE + 18 + IK$

$= 7 + 7 + 18 + 18$

$= 50$

9. If the perimeter of kite *ABCD* = 86 feet, find *x* and *y*.



$5x-15 = 2x+3$

$3x-15 = 3$

$3x = 18$

$x = 6$

$3y+3y+2y-2+2y-2 = 86$

$10y-4 = 86$

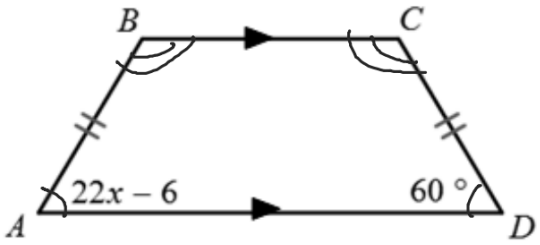
$10y = 90$

$y = 9$

This is an _____.

x = 3

∠A = 60° ∠B = 120° ∠C = 120°



$22x - 6 = 60$

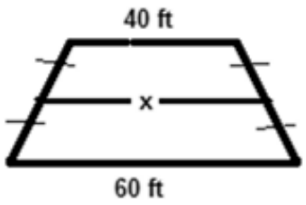
$22x = 66$

$x = 3$

$\text{midsegment} = \frac{b_1 + b_2}{2}$

Find the missing measure (median is the middle support) of the trusses shown below.

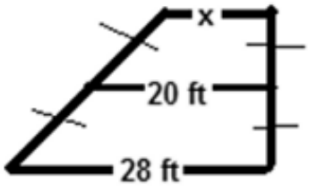
a)



$x = \frac{50}{}$

$x = \frac{40+60}{2}$

b)



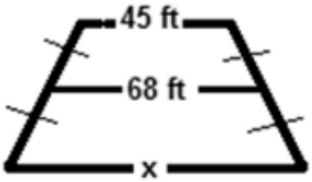
$x =$ _____

$2(20) = \left(\frac{x+28}{2}\right)2$

$40 = x + 28$

$x = 12$

c)



$x =$ _____

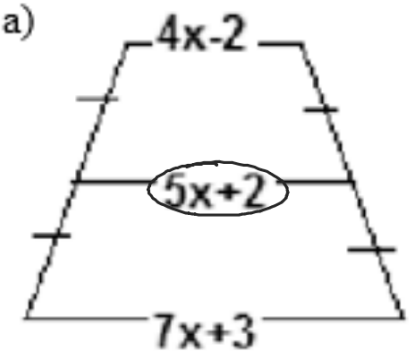
$2(68) = \left(\frac{x+45}{2}\right)2$

$136 = x + 45$

$x = 91$

Find the value of x

a)



$$5x+2 = \frac{4x-2+7x+3}{2}$$

$$2(5x+2) = \left(\frac{11x+1}{2}\right)2$$

$$10x+4 = 11x+1$$

$$4 = x+1$$

$$x = 3$$