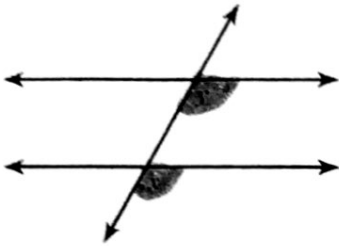


Final Exam REVIEW A

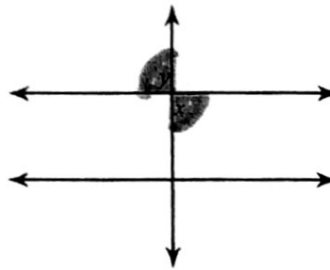
Identify each pair of angles as corresponding, alternate interior, alternate exterior, consecutive interior, or vertical.

1)



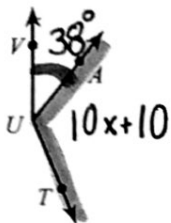
Corresponding

2)



vertical

3) $m\angle VUA = 38^\circ$, $m\angle VUT = 14x + 4$,
and $m\angle AUT = 10x + 10$. Find x .



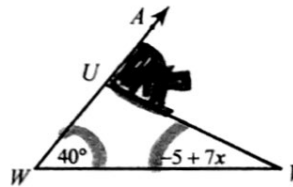
$$38 + 10x + 10 = 14x + 4$$

$$10x + 48 = 14x + 4$$

$$44 = 4x$$

$$\boxed{11 = x}$$

4)



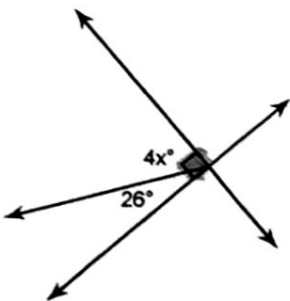
$$15x - 5 = 40 + (-5 + 7x)$$

$$15x - 5 = 35 + 7x$$

$$8x = 40$$

$$\boxed{x = 5}$$

5)

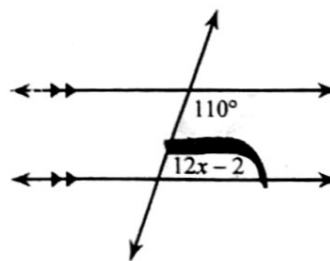


$$4x + 26 = 90$$

$$4x = 64$$

$$\boxed{x = 16}$$

6)

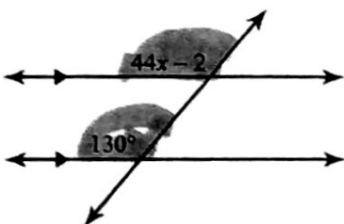


$$12x - 2 + 110 = 180$$

$$12x = 72$$

$$\boxed{x = 6}$$

7)



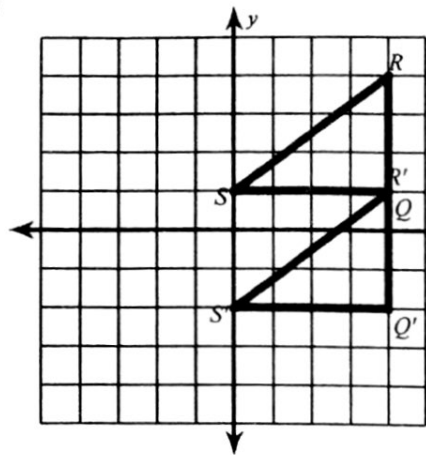
$$44x - 2 = 130$$

$$44x = 132$$

$$\boxed{x = 3}$$

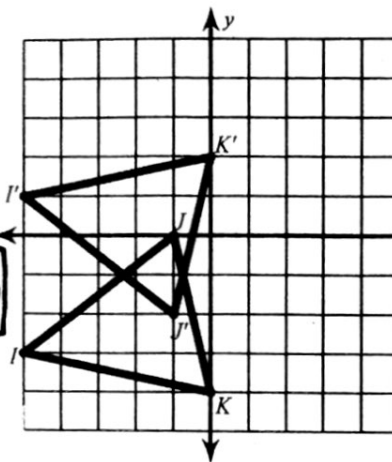
Write a rule to describe each transformation.

8)



$R(4,4) \rightarrow R'(4,1)$
 $Q(4,1) \rightarrow Q'(4,-2)$
 $S(0,1) \rightarrow S'(0,-2)$

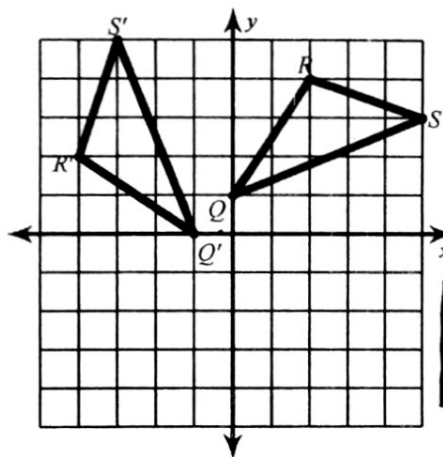
RULE:
 $(x,y) \rightarrow (x,y-3)$



$I(5,-3) \rightarrow I'(5,1)$
 $J(-1,0) \rightarrow J'(-1,-2)$
 $K(0,-4) \rightarrow K'(0,2)$

reflection
 across $y=-1$

10)

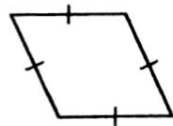


$Q(0,1) \rightarrow Q'(-1,0)$
 $R(2,4) \rightarrow R'(-4,2)$
 $S(5,3) \rightarrow S'(-3,5)$

RULE: $(x,y) \rightarrow (-y,x)$
 Rotation 90° CCW or 270° CW

State all possible names for each figure.

11)



quadrilateral
 parallelogram
 rhombus

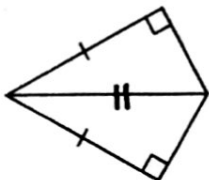
12)



quadrilateral
 trapezoid

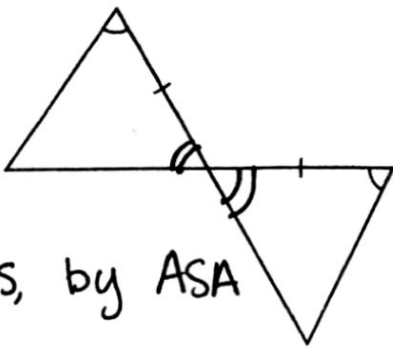
State if the two triangles are congruent. If they are, state how you know.

13)



By the reflexive property, these two triangles are congruent by HL.

14)



yes, by ASA

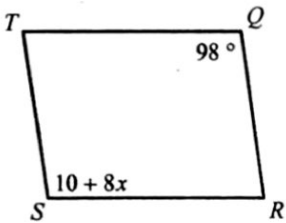
15)



yes, by ASA

Solve for x . Each figure is a parallelogram.

16)

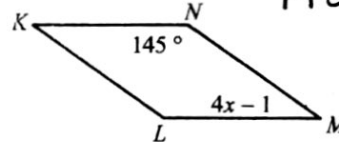


$$10 + 8x = 98$$

$$8x = 88$$

$$x = 11$$

17)



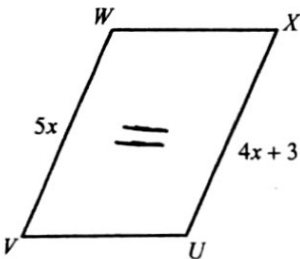
$$145 + 4x - 1 = 180$$

$$144 + 4x = 180$$

$$4x = 36$$

$$x = 9$$

18)

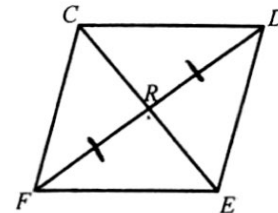


$$5x = 4x + 3$$

$$x = 3$$

19) $RF = 23$

$$DF = 4x + 14$$



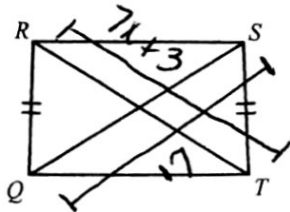
$$46 = 4x + 14$$

$$32 = 4x$$

$$x = 8$$

20) $QS = 17$

$$RT = 7x + 3$$

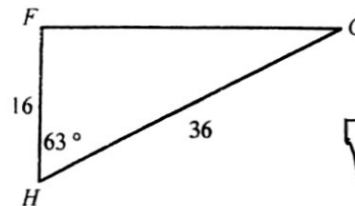


$$7x + 3 = 17$$

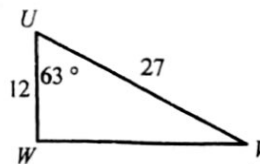
$$7x = 14$$

$$x = 2$$

21) $\triangle HGF \sim \triangle UVW$



SAS

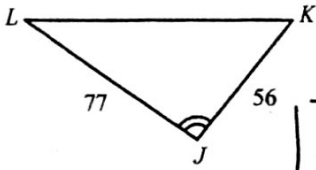


$$\frac{16}{12} = \frac{36}{27}$$

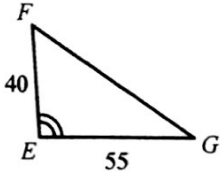
$$\frac{4}{3} = \frac{4}{3} \checkmark$$

$\angle H \cong \angle U \checkmark$

22) $\triangle JKL \sim \triangle EFG$



SAS

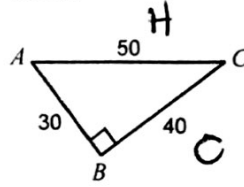


$$\frac{40}{56} = \frac{55}{77}$$

$$\frac{5}{7} = \frac{5}{7}$$

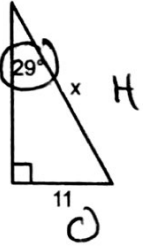
$\angle J \cong \angle E$

23) $\sin A$



$$\sin A = \frac{40}{50} = \frac{4}{5}$$

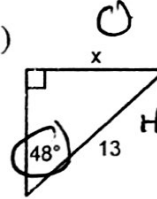
24)



$$\sin 29 = \frac{11}{x}$$

$$x = 22.7$$

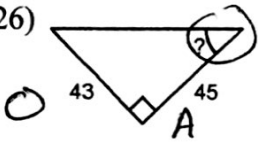
25)



$$\sin 48 = \frac{x}{13}$$

$$x = 9.7$$

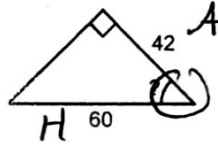
26)



$$\tan^{-1} = \frac{43}{45}$$

$$= 44^\circ$$

27)

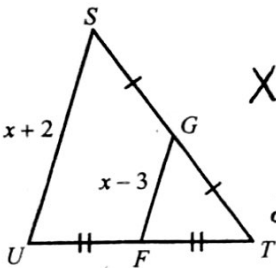


$$\cos^{-1} = \frac{42}{60}$$

$$= 46^\circ$$

Solve for x.

28)

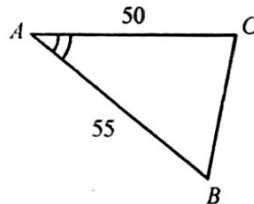
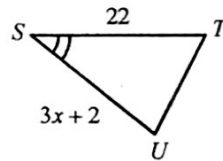


$$x-3 = \frac{x+2}{2}$$

$$2x-6 = x+2$$

$$x = 8$$

29) $\triangle ABC \sim \triangle STU$



$$\frac{50}{3x+2} = \frac{55}{22}$$

$$1100 = 165x + 110$$

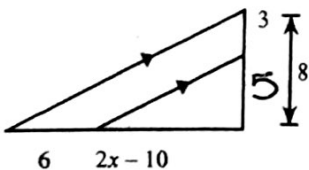
$$990 = 165x$$

$$\frac{990}{165} = \frac{165x}{165}$$

$$6 = x$$

$$x = 6$$

30)



$$\frac{6}{3} = \frac{2x-10}{5}$$

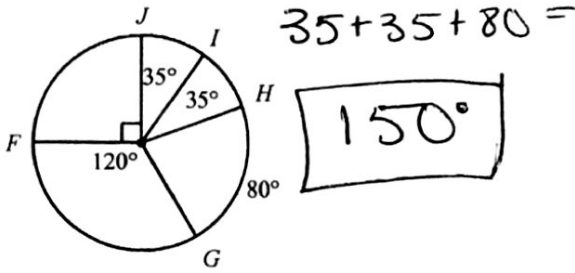
$$30 = 6x - 30$$

$$60 = 6x$$

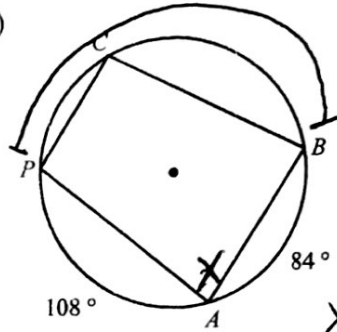
$$x = 10$$

Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

31) $m\widehat{JG}$



32)

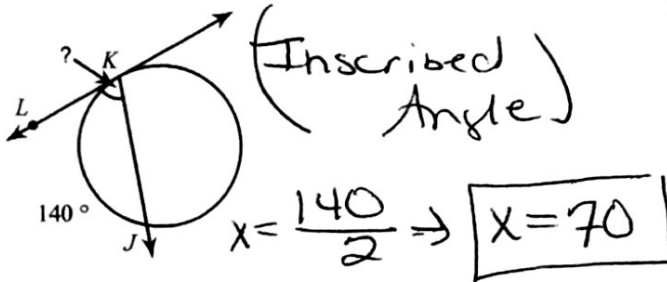


$$108 + 84 = 192$$

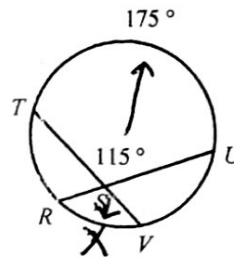
$$\begin{array}{r} 360 \\ - 192 \\ \hline 168 \end{array}$$

$$x = \frac{168}{2} \quad \boxed{x = 84^\circ}$$

33)



34)



(Vertex Inside)

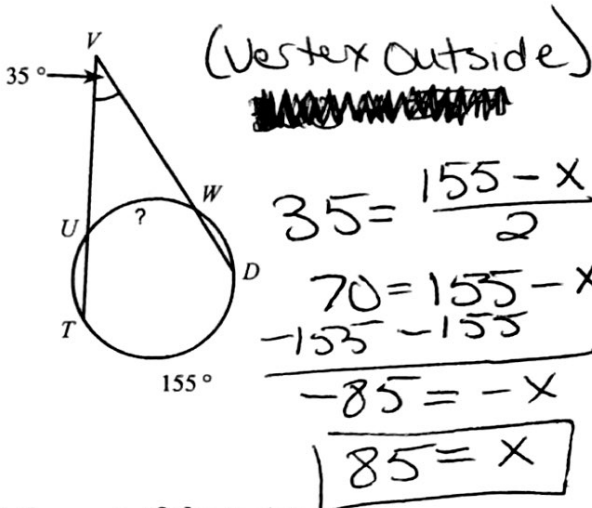
$$115 = \frac{175 + x}{2}$$

$$230 = 175 + x$$

$$55 = x$$

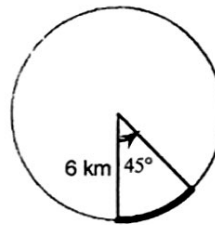
$$\boxed{x = 55^\circ}$$

35)



Find the length of the arc.

36)



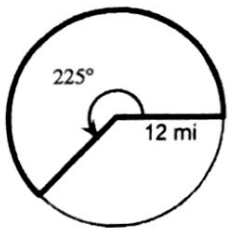
$$AL = \frac{2\pi r \theta}{360}$$

$$AL = \frac{2\pi(6)(45)}{360}$$

$$\boxed{AL = \frac{3\pi}{2} \text{ km}}$$

Find the area of the sector.

37)



$$A_s = \frac{\pi r^2 \theta}{360}$$

$$A_s = \frac{\pi(12)^2(225)}{360}$$

$$\boxed{A_s = 90\pi \text{ mi}^2}$$

38) area = $49\pi \text{ m}^2$

$$C = 2\pi r \quad A = \pi r^2$$

Solve for circumference

$$49\pi = \pi r^2$$

$$49 = r^2$$

$$7 = r$$

$$\text{so } 2\pi r = 2\pi(7)$$

$$\boxed{C = 14\pi}$$

39) circumference = $20\pi \text{ m}$

$$20\pi = 2\pi r$$

$$10 = r$$

$$\boxed{10\text{m} = r}$$

40) area = $49\pi \text{ yd}^2$

$$49\pi = \pi r^2$$

$$49 = r^2$$

$$7 = r$$

$$7(2) = d$$

$$\boxed{14 = d}$$

Solve for radius

Solve for diameter