

A. Find the variables x and y

1. $x=65^\circ, y=50^\circ$

2. $x=45^\circ, y=45^\circ$

3. $y=20, x=30$

4. $x=45^\circ, y=90^\circ$

5. $x=55, y=70$

6. $x=20$

7. $x=90^\circ, y=18^\circ$

8. $x=97^\circ, y=62^\circ$

9. Find 1,2,3,4,5,6 $1=104^\circ, 2=79^\circ, 3=65^\circ, 4=45^\circ, 5=73^\circ, 6=147^\circ$

10. $x=67.5, y=56.25$

11. $x=70^\circ, y=20^\circ$

12. $x=15, y=120^\circ$

13. $x=44^\circ, y=68^\circ$

14. $x=45^\circ, y=67.5^\circ$

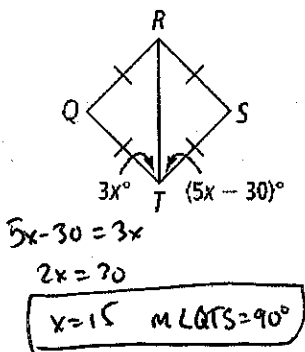
B - Draw a picture and label the congruent parts, if the pair is congruent.

Write a congruency statement and write the postulate that proves it. SSS, SAS, ASA, AAS

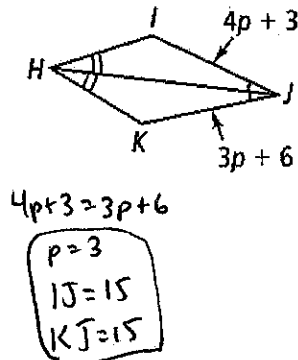
<p>1. $\triangle ABC$ and $\triangle RSQ$ $\overline{AC} \cong \overline{QS}, \overline{AB} \cong \overline{QR}$ and $\angle B \cong \angle R$</p> <p>NEI</p>	<p>2. $\triangle ABC$ and $\triangle DFE$ $BC \cong DF, AC \cong FE, \angle C \cong \angle F$</p> <p>$\triangle ABC \cong \triangle EDF$ SAS</p>	<p>3. $\triangle WXZ$ and $\triangle ABC$ $WX \cong BC, XZ \cong AC,$ $\angle WXZ \cong \angle BCA$</p> <p>$\triangle WXZ \cong \triangle BCA$ SAS</p>
<p>4. $\triangle ABC$ and $\triangle QRS$ $\overline{AB} \cong \overline{SQ}, \angle A \cong \angle Q,$ and $\angle B \cong \angle S$</p> <p>$\triangle ABC \cong \triangle QSR$ ASA</p>	<p>5. $\triangle ABC$ and $\triangle DFE$ $BC \cong DF, AC \cong EF, BA \cong ED$</p> <p>$\triangle ABC \cong \triangle EDF$ SSS</p>	<p>6. $\triangle WXZ$ and $\triangle CAB$ $WX \cong AB, \angle XZW \cong \angle BCA,$ $\angle WXZ \cong \angle CBA$</p> <p>$\triangle WXZ \cong \triangle ABC$ AAS</p>
<p>7. $\triangle ABC$ and $\triangle FDE$ $BC \cong DF, AC \cong EF, \angle F \cong \angle A$</p> <p>NEI</p>	<p>8. $\triangle ABC$ and $\triangle SQR$ $\overline{AB} \cong \overline{QR}, \angle Q \cong \angle A$ and $\angle B \cong \angle R$</p> <p>$\triangle ABC \cong \triangle QRS$ ASA</p>	<p>9. $\triangle WXZ$ and $\triangle CAB$ $WX \cong AB, \angle XZW \cong \angle BCA,$ $\angle WXZ \cong \angle CBA$</p> <p>$\triangle WXZ \cong \triangle ABC$ AAS</p>

C. Use the angle and perpendicular bisectors to find the variable and measurements indicated

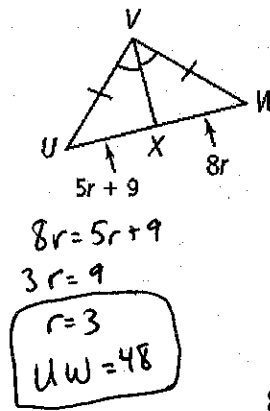
1. $x, m\angle QTS$



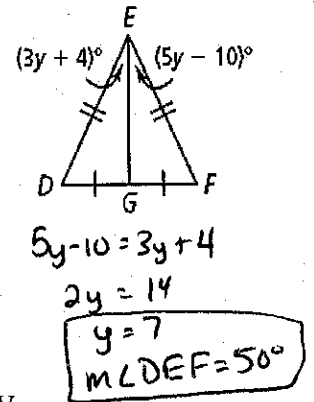
2. p, IJ, KJ



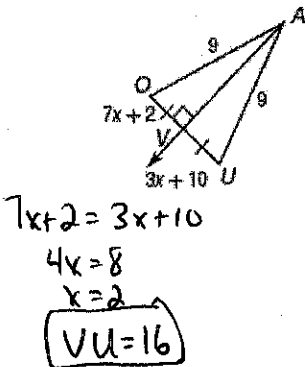
3. r, UW



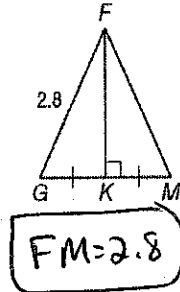
4. $y, m\angle DEF$



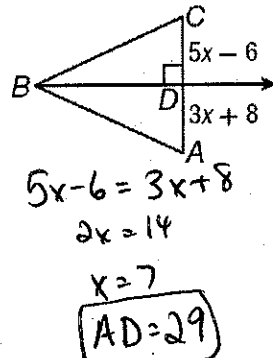
5. VU



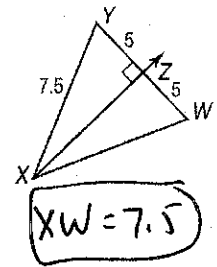
6. FM



7. AD



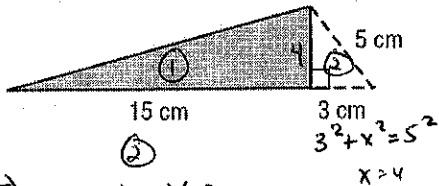
8. XW



D. Find the area of the two triangles shown. Show all your work.

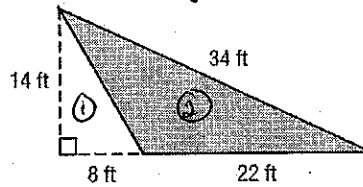
③ is the large triangle made up of the white and grey triangle together

1.



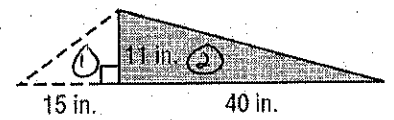
① $\frac{1}{2}(4)(15) = 30 \text{ cm}^2$
 ② $\frac{1}{2}(4)(3) = 6 \text{ cm}^2$
 ③ 36 cm^2

2.



① $\frac{1}{2}(14)(8) = 56 \text{ ft}^2$
 ② $\frac{1}{2}(14)(22) = 154 \text{ ft}^2$
 ③ 210 ft^2

3.



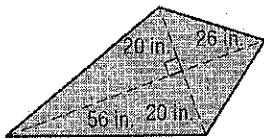
$\frac{1}{2}(15)(11) = 82.5 \text{ in}^2$
 $\frac{1}{2}(11)(40) = 220 \text{ in}^2$
 ① 82.5 in^2
 ② 220 in^2
 ③ 302.5 in^2

A **Rhombus** is a quadrilateral with four congruent sides. A square is a rhombus, but a rhombus is not a square. A **Kite** is a quadrilateral with exactly two pairs of consecutive congruent sides, the angles between the unequal sides are equal and the diagonals do create a 90° angle.

To find the area of a kite or a Rhombus, use the formula $A = \frac{1}{2}d_1d_2$

E. Identify whether the figure is a rhombus or kite, and find the area of each.

1.



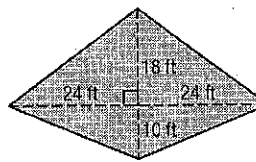
$A = \frac{1}{2}(82)(40)$
 $A = 1640$

2.



$A = \frac{1}{2}(40)(20)$
 $A = 400$

3.



$A = \frac{1}{2}(28)(48)$
 $A = 672$

4.



$A = \frac{1}{2}(26)(26)$
 $A = 338$

5.



$A = \frac{1}{2}(14)(16)$
 $A = 112$