Write the equation of a line, in slope intercept form, that is parallel to y = 3x - 4 and passes through the point (-1, 3)

$m = 3$ $\quad m = 3$ $\quad (x_1, y_1)$

$y = mx + b$

$$y - y_1 = m(x - x_1)$$
$$y - 3 = 3(x + 1)$$
$$y - 3 = 3x + 3$$
$$y = 3x + 6$$

Write the equation of a line in slope intercept form of a line that is perpendicular y = 3x - 4 and passes through the point (-6, 1)

$m = 3$ $\quad m = -\frac{1}{3}$

$$y - y_1 = m(x - x_1)$$
$$y - 1 = -\frac{1}{3}(x + 6)$$
$$y - 1 = -\frac{1}{3}x - 2$$
$$y = -\frac{1}{3}x - 1$$

Find the length of segmet AB if A (2, 6) and B (-3, 9)

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$= \sqrt{(-3-2)^2 + (9-6)^2}$$

$$= \sqrt{(-5)^2 + (3)^2}$$

$$\sqrt{25+9} = \sqrt{34}$$

A(2,6) B(-3,9)

Find the midpoint of segment AB.

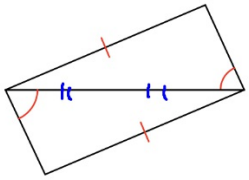
$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$$

$$\left(\frac{2+(-3)}{2}, \frac{6+9}{2}\right)$$

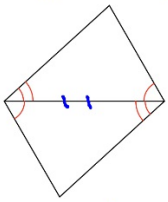
$$\left(\frac{-1}{2}, \frac{15}{2}\right) = (-.5, 7.5)$$

State the postulate or theorem you would use to prove each pair of triangles congruent. If the triangles cannot be proved congruent, explain why.

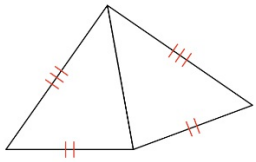
SAS, SSS, ASA, AAS, HL



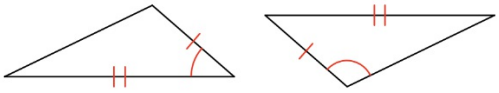
Not ≅



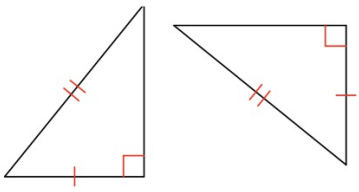
ASA



SSS

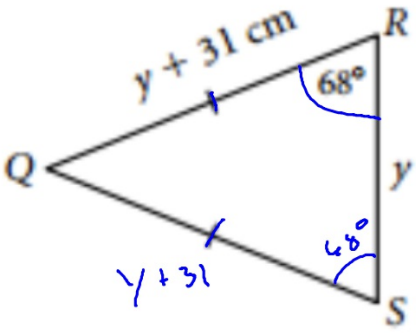


Corresponding ∠'s Not ≅.



HL

. The perimeter of $\triangle QRS$ is 344 cm. $m\angle Q =$ 44°, $QR =$ 125 cm



$m\angle Q + 68 + 68 = 180$

$m\angle Q + 136 = 180$

$-136 \quad -136$

$m\angle Q = 44$

$y + y + 31 + y + 31 = 344$

$3y + 62 = 344$

$-62 \quad -62$

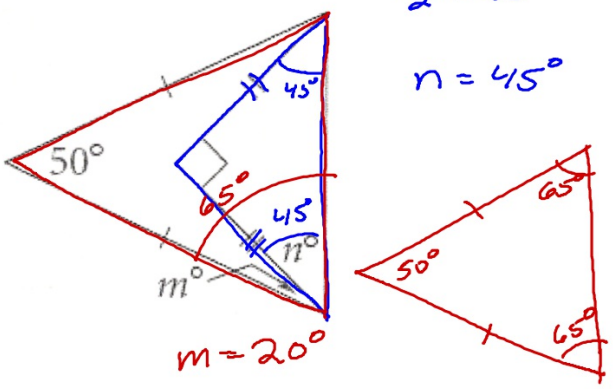
$\frac{3y}{3} = \frac{282}{3}$

$y = 94$

$QR = y + 31$

$94 + 31 = 125$ cm

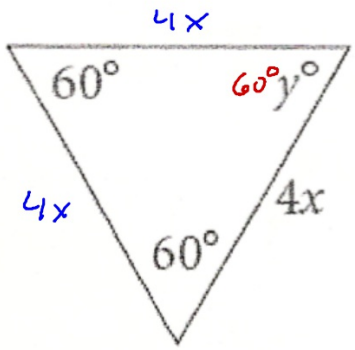
Solve for each variable



$\frac{90}{2} = 45$

$n = 45°$

$m = 20°$



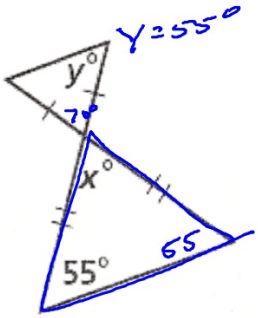
Perimeter is 54.

$4x + 4x + 4x = 54$

$12x = 54$

$x = 4.5$

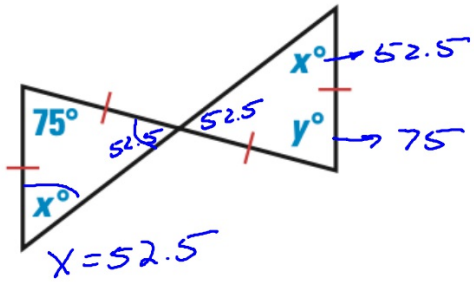
Solve for each variable



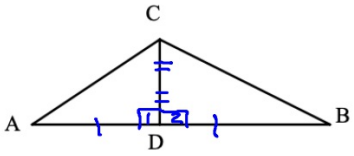
Y = 55°

110 + Y = 180

Y = 70°



X = 52.5

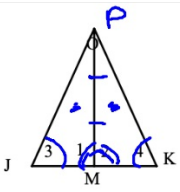


Given: $\overline{CD} \perp \overline{AB}$ (midpoint)

D is the mp of $\overline{AB}$

Prove: $\overline{CA} \cong \overline{CB}$

Statement	Reason
1) $\overline{CD} \perp \overline{AB}$, D is midpoint of $\overline{AB}$	1) Given
2) $\overline{AD} \cong \overline{BD}$	2) Definition of midpt
3) $\overline{CD} \cong \overline{CD}$	3) Reflexive prop
4) $\angle 1$ & $\angle 2$ are Right $\angle$'s	4) Def of $\perp$ lines
5) $\angle 1 \cong \angle 2$	5) All Right $\angle$'s $\cong$.
6) $\triangle ADC \cong \triangle BDC$	6) SAS
7) $\overline{CA} \cong \overline{CB}$	7) CPCTC

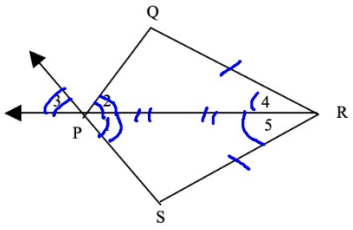


Given: $\angle 1 \cong \angle 2$

$\angle 3 \cong \angle 4$

Prove: M is the mp of $\overline{JK}$

Statement	Reason
1) $\angle 1 \cong \angle 2$, $\angle 3 \cong \angle 4$	1) Given
2) $\overline{PM} \cong \overline{PM}$	2) Reflexive prop.
3) $\triangle JMP \cong \triangle KMP$	3) AAS
4) $\overline{JM} \cong \overline{KM}$	4) CPCTC
5) M is midpt of $\overline{KJ}$	5) Definition of midpt



Given: $<4 \cong <5, \overline{QR} \cong \overline{SR}$

Prove: $<2 \cong <3$

Statements	Reasons
1) $\angle 4 \cong \angle 5$, $\overline{QR} \cong \overline{SR}$	1) Given
2) $\overline{PR} \cong \overline{PR}$	2) Reflexive prop
3) $\triangle PQR \cong \triangle PSR$	3) SAS
4) $\angle 1 \cong \angle 2$	4) CPCTC
5) $\angle 1 \cong \angle 3$	5) Vertical $\angle$'s $\cong$
6) $\angle 2 \cong \angle 3$	6) Substitution prop.