A **perpendicular bisector** is a line that is a perpendicular to a segment at the segment's midpoint.
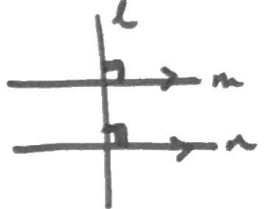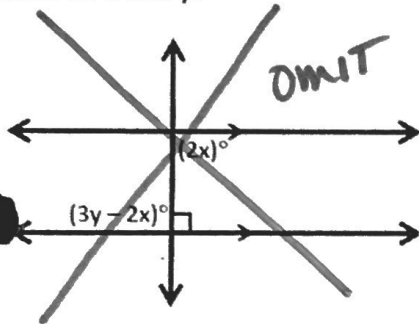
3 Important Theorems about Perpendicular Lines:

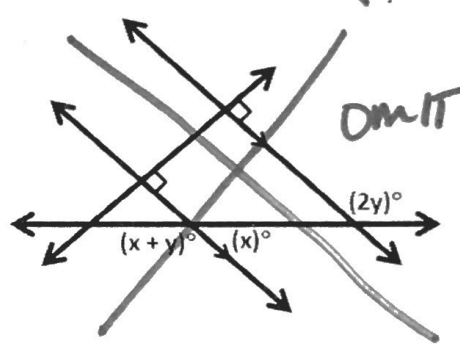1) If a linear pair is ≅, then lines are ⊥.
(both have meas. of 90°)

2) If a line is ⊥ to one of 2 parallel lines, it is also ⊥ to the other parallel line.

3) If 2 lines are ⊥ to the same line, then the lines are ∥.

Solve for x and y:
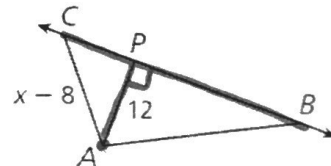
OMIT

$(2x)°$
$(3y - 2x)°$

Solve for x and y:

OMIT

$(x + y)°$ $(x)°$ $(2y)°$

Name the shortest segment from point A to $\overline{BC}$. $\overline{AP}$

Write and solve an inequality for x.

> ⊥

$12 < x - 8$ OR $x - 8 > 12$
$+8 \quad +8$ $+8 \quad +8$
$\overline{\quad 20 < x \quad}$ $\boxed{x > 20}$

* perpendicular lines are always the shortest.

Given: r ∥ s, ∠1 ≅ ∠2
Prove: r ⊥ t

Statement	Reason
① r ∥ s	① Given
② ∠2 ≅ ∠3	② Corresponding ∠'s post.
③ ∠1 ≅ ∠2	③ Given
④ ∠1 ≅ ∠3	④ Transitive prop.
⑤ r ⊥ t	⑤ If a linear pair is ≅, then lines are ⊥.