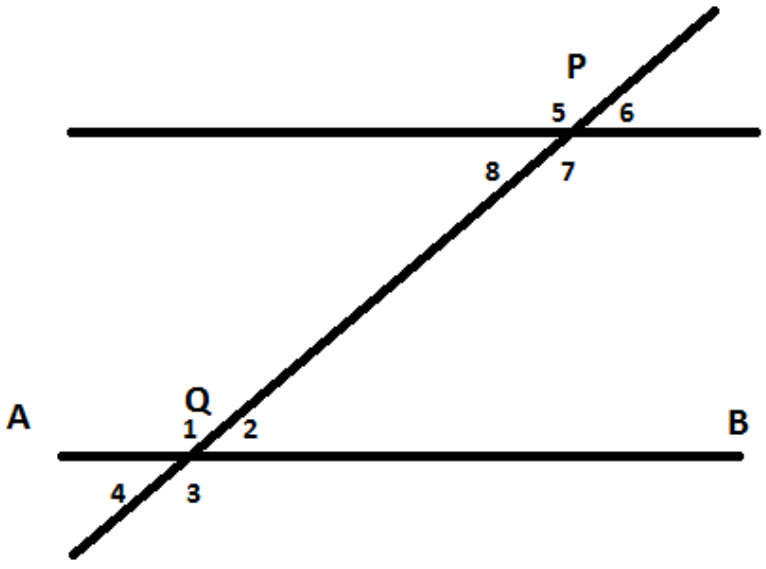
Answer on Question #44206, Math, Geometry

1. Construct a line parallel to line segment AB through point P. For the first step in your construction, you must use the given point Q to draw a line connecting point P to segment AB. Extend your segment beyond both points.

2. Given m<PQB =52 , solve for all angles formed by the parallel lines (segment AB and your newly constructed parallel line) cut by the transversal (the segment containing points P and Q).

3. Identify all pairs of angles (alternate interior, alternate exterior, corresponding, and consecutive interior) by labeling each angle you solved in step 2 with a letter or symbol.

Answer.



Alternate interior angles: $\angle 1 \; and \; \angle 7, \; \angle 2 \; and \; \angle 8.$

Alternate interior angles: $\angle 3 \; and \; \angle 5, \; \angle 4 \; and \; \angle 6.$

Corresponding angles: $\angle 1 \; and \; \angle 5$, $\angle 2 \; and \; \angle 6$, $\angle 3 \; and \; \angle 7$, $\angle 4 \; and \; \angle 8$.

Consecutive interior angles: $\angle 1 \; and \; \angle 8$, $\angle 2 \; and \; \angle 7$.

Vertical angles: $\angle 1 \; and \; \angle 3$, $\angle 2 \; and \; \angle 4$, $\angle 5 \; and \; \angle 7$, $\angle 6 \; and \; \angle 8$.

If $m\angle 2 = 52^o$ **then** $m\angle 4 = 52^o$, $m\angle 6 = 52^o$, $m\angle 8 = 52^o$,

$m\angle 1 = 128^o$, $m\angle 3 = 128^o$, $m\angle 5 = 128^o$, $m\angle 7 = 128^o$,