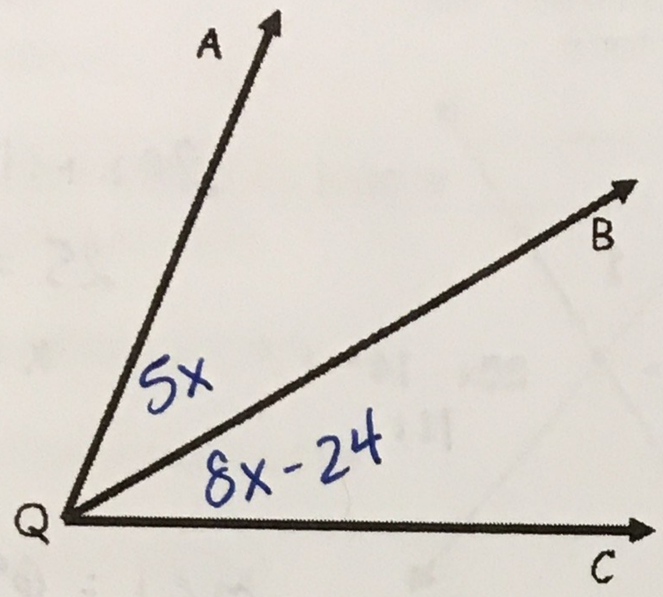
5.



QB is the angle bisector of ∠AQC.

m∠AQB = 5x

m∠BQC = 8x - 24

$5x = 8x - 24$

$-3x = -24$

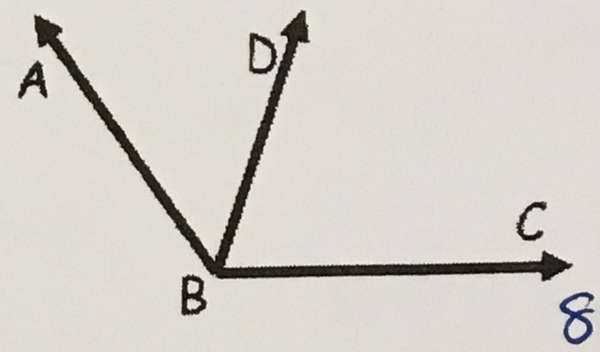
$x = 8$

Find the following:

x = 8 m∠AQB = 40°

m∠BQC = 40° m∠AQC = 80°

6.



m∠ABC = 122

m∠ABD = 8x + 20

m∠DBC = 22x - 3

$8x + 20 + 22x - 3 = 122$

$30x + 17 = 122$

$30x = 105$

Find the following:

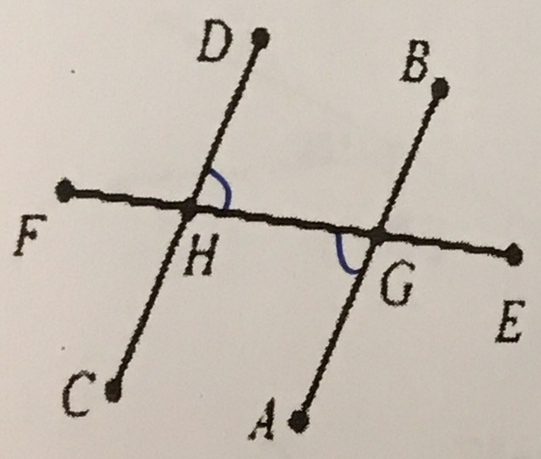
x = 3.5 m∠ABD = 48

m∠DBC = 74

$74 + 48 = 122$ ✓

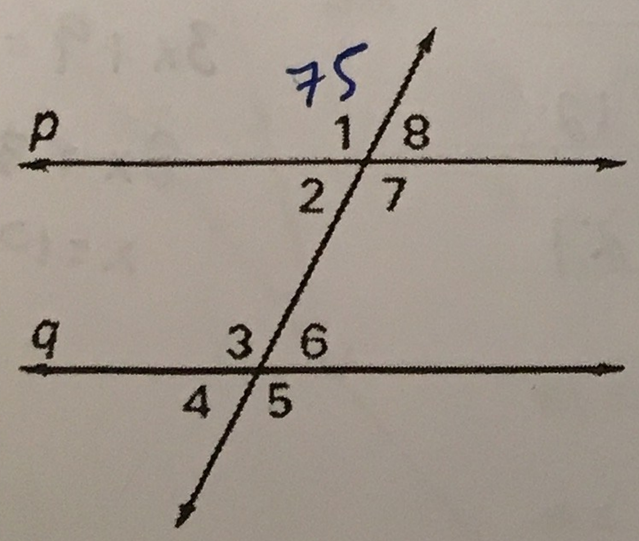
Station 3—Parallel Line Relationships

For problems 1-5, name the types of angles listed (alt ext, alt int, same side ext, same side int, corresponding)



1. ∠DHG and ∠HGA — alt. int.
2. ∠FHC and ∠DHG — vertical
2. ∠BGE and ∠FHC — alt. ext.
3. ∠EGA and ∠GHC — corresponding
4. ∠AGH and ∠EGA — linear pair, supplementary
5. ∠DHG and ∠BGH — same side interior

If $p \parallel q$ and $m\angle 1 = 75°$, find the measures of all the angles formed by the parallel lines cut by the transversal.



$m\angle 1 = 75$ $m\angle 2 = 105$

$m\angle 3 = 75$ $m\angle 4 = 105$

$m\angle 5 = 75$ $m\angle 6 = 105$

$m\angle 7 = 75$ $m\angle 8 = 105$