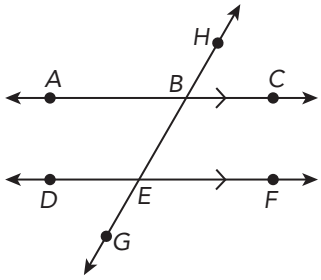
Name: _____ Date: _____

Lesson 6.3 Alternate Interior, Alternate Exterior, and Corresponding Angles

In each diagram, $\overleftrightarrow{AC}$, $\overleftrightarrow{DF}$, and $\overleftrightarrow{GH}$ are straight lines. $\overleftrightarrow{AC}$ is parallel to $\overleftrightarrow{DF}$. Identify all the pairs of angles formed by the intersection of $\overleftrightarrow{GH}$ with $\overleftrightarrow{AC}$ and $\overleftrightarrow{DF}$.

Example



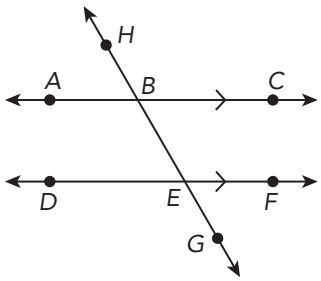
a) Alternate interior angles: $\angle ABE$ and $\angle FEB$
$\angle DEB$ and $\angle CBE$

b) Alternate exterior angles: $\angle ABH$ and $\angle FEG$
$\angle DEG$ and $\angle CBH$

c) Corresponding angles: $\angle ABH$ and $\angle DEH$
$\angle ABG$ and $\angle DEG$
$\angle HBC$ and $\angle HEF$
$\angle CGB$ and $\angle FEG$

Complete.

1.

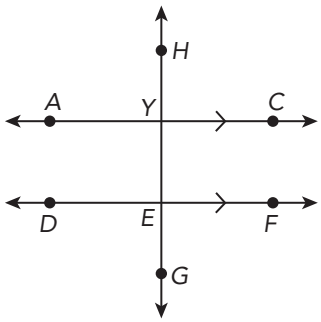


a) Alternate interior angles: $\angle ABG$ and _____
_____ and $\angle DEH$

b) Alternate exterior angles: _____ and $\angle ABH$
$\angle HBC$ and _____

c) Corresponding angles: $\angle ABG$ and $\angle DEG$
_____ and _____
_____ and _____
_____ and _____

2.



a) Alternate interior angles: _____ and _____
_____ and _____

b) Alternate exterior angles: _____ and _____
_____ and _____

c) Corresponding angles: _____ and _____
_____ and _____
_____ and _____
_____ and _____

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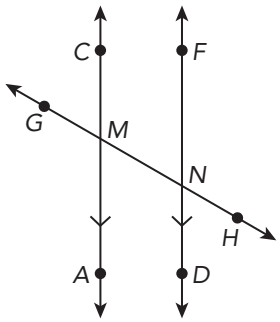
Complete.

3.



a) Alternate interior angles: _____ and _____

_____ and _____

b) Alternate exterior angles: _____ and _____

_____ and _____

c) Corresponding angles: _____ and _____

_____ and _____

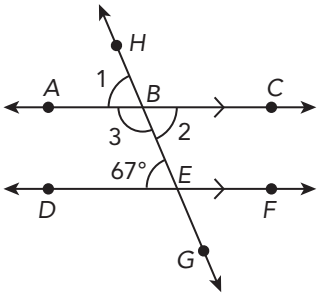
_____ and _____

_____ and _____

Find the measure of each numbered angle.

Example

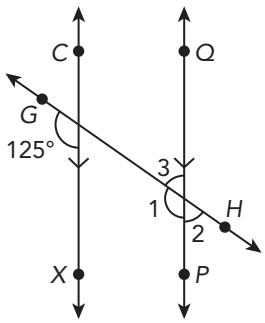
In the diagram, $\overleftrightarrow{AC}$ is parallel to $\overleftrightarrow{DF}$.



$m\angle 1 = 67°$	Corr. ∠s
$m\angle 2 = 67°$	Alt. int. ∠s
$m\angle 1 + m\angle 3 = 180°$	Supp. ∠s
$67° + m\angle 3 = 180°$	Substitute.
$67° + m\angle 3 - 67° = 180° - 67°$	Subtract 67° from both sides.
$m\angle 3 = 113°$	Simplify.

Complete.

4. In the diagram, $\overleftrightarrow{XY}$ is parallel to $\overleftrightarrow{PQ}$. Find the measures of ∠1, ∠2, and∠3.



m∠1 = _____	Corr. ∠s
m∠1 + m∠3 = _____	Supp. ∠s
_____ + m∠3 = _____	Substitute m∠1 = _____.
m∠3 + _____ − 125° = _____ − 125°	Subtract 125° from both sides.
m∠3 = _____	Simplify.
m∠3 = _____	Vert. ∠s
= _____	