

Key

3.1 – Lines and Angles

Use the diagram to name each of the following.

- 1) a pair of parallel planes

*Plane QRT + UVX
etc.*

- 2) all lines that are parallel to \overleftrightarrow{RV}

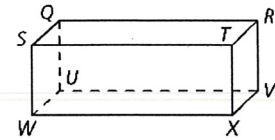
$\overleftrightarrow{TX}, \overleftrightarrow{QU}, \overleftrightarrow{SW}$

- 3) four lines that are skew to \overleftrightarrow{WX}

$\overleftrightarrow{TR}, \overleftrightarrow{QS}, \overleftrightarrow{RU}, \overleftrightarrow{QU}$

- 4) all lines that are parallel to plane $QUVR$

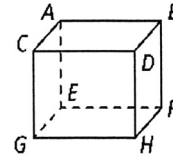
$\overleftrightarrow{ST}, \overleftrightarrow{TX}, \overleftrightarrow{WX}, \overleftrightarrow{SW}$



- 5) a plane parallel to plane $QUVS$

Plane RVX

In #6–11, describe the statement as *true* or *false*. If false, explain.



- 6) \overleftrightarrow{AE} and \overleftrightarrow{EF} are skew lines.

False, they intersect

- 7) plane $DBF \parallel$ plane ABD

False, they intersect

- 8) $\overleftrightarrow{GH} \parallel \overleftrightarrow{EF}$

True

- 9) $\overleftrightarrow{DB} \parallel \overleftrightarrow{AE}$

False, they are skew

- 10) plane $EFH \parallel$ plane ABD

True

- 11) \overleftrightarrow{FH} and \overleftrightarrow{CD} are skew lines.

True

Identify all pairs of each type of angle in the diagram below right.

- 12) corresponding angles

$\angle 1 + \angle 5, \angle 2 + \angle 6, \angle 4 + \angle 8, \angle 3 + \angle 7$

- 13) same-side interior angles

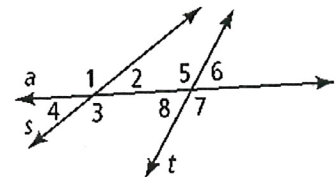
$\angle 2 + \angle 5, \angle 3 + \angle 8$

- 14) alternate interior angles

$\angle 3 + \angle 5, \angle 2 + \angle 8$

- 15) alternate exterior angles

$\angle 1 + \angle 7, \angle 4 + \angle 6$



Decide whether the angles are *alternate interior angles*, *same-side interior angles*, *corresponding angles*, or *alternate exterior angles*.

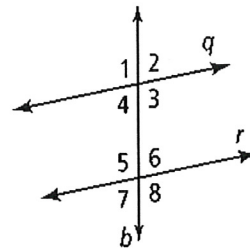
16) $\angle 2$ and $\angle 7$ **AEA**

17) $\angle 5$ and $\angle 4$ **SSI**

19) $\angle 6$ and $\angle 4$ **AIA**

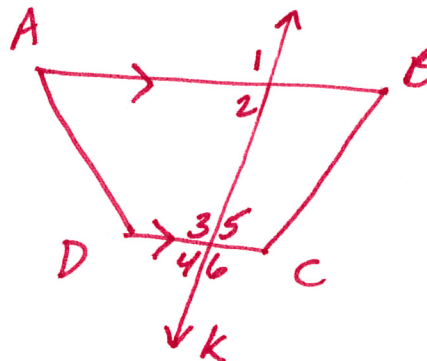
18) $\angle 8$ and $\angle 3$ **CA**

20) $\angle 1$ and $\angle 5$ **CA**



21) Draw a diagram with trapezoid $ABCD$ being intersected by line k . On this diagram, make sure it also meets all the following conditions. Please make sure to label the diagram correctly.

- \overleftrightarrow{AB} and \overleftrightarrow{DC} are parallel.
- $\angle 1$ and $\angle 6$ are alternate exterior angles.
- $\angle 2$ and $\angle 3$ are same-side interior angles.
- $\angle 4$ and $\angle 5$ are each supplementary to $\angle 3$.



22) The map at the right shows the intersection of Maple Street and Oak Street by Main Street. Name the angle pairs represented by the locations listed below.

- town hall and gas station

SSI

- school and library

CA

- library and post office

AEA

- school and gas station

AIA

