## Geometry Note-Taking Guide

SECTION 1.4 - Parallel, Perpendicular, and Skew

Two lines are $\qquad$ if they are coplanar and do not intersect. (Symbol: $\qquad$ )
Important: Arrowheads are used to indicate two lines are parallel.
Ex:

$\stackrel{\rightharpoonup}{\mathrm{AB}} \| \stackrel{\rightharpoonup}{\mathrm{CD}}$
Two lines are $\qquad$ if they do not intersect and are not coplanar. (No Symbol) Ex:


Line k and line m are skew

## Ex 1:

Determine if the statement is true or false.
a) Line $n$ and line $m$ are perpendicular.
b) Line k and line n are perpendicular.
c) Line $n$ and line $m$ are parallel.
d) Line k and line n are skew.
e) Line k and line m are skew.
f) Plane $T$ and plane $U$ are perpendicular.

g) Plane T and plane U are parallel.

## Ex 2:

Complete the statement for the right prism. Answer parallel, perpendicular, or skew.
Note: a right prism is a three-dimensional figure where all the sides intersect to form right angles.
a) $\overleftrightarrow{\mathrm{AE}}$ and $\overleftrightarrow{\mathrm{BF}}$ are $\qquad$ .
b) $\overleftrightarrow{\mathrm{GH}}$ and $\overleftrightarrow{\mathrm{DH}}$ are $\qquad$ .
c) $\overleftrightarrow{\mathrm{CG}}$ and $\overleftrightarrow{\mathrm{EF}}$ are $\qquad$ .
d) Plane AEG and plane GHF are $\qquad$ .
e) Plane ABE and plane CDH are $\qquad$ .


Important: The symbol $\qquad$ on a diagram indicates a right angle.
Ex:


Two planes are $\qquad$ if they do not intersect.
Ex:


Plane $M$ and plane $P$ are parallel

## Ex 3:

Note: For some of the questions there may be more than one right answer.
a) Give another name for $\overleftrightarrow{\mathrm{EF}}$.
b) Give another name for $\overline{\mathrm{HG}}$.
c) Name all other rays with endpoint J .
d) Name two sets of three collinear points.

e) Name three points that are noncollinear.
f) What is the intersection of $\overleftrightarrow{\mathrm{JF}}$ and $\overleftrightarrow{\mathrm{HG}}$.

## Ex 4:

Make a sketch of the description given.
Note: There are many different ways to make a correct sketch.
a) Three lines intersecting at the same point.
b) Two lines that do not intersect. In other words, two parallel lines.
c) Three lines that intersect such that there are three points of intersection.
d) A line intersecting a plane at one point.
e) Two planes that do not intersect. In other words, two planes that are parallel.
f) Two planes that intersect to form a right angle. In other words, two planes that are perpendicular.

