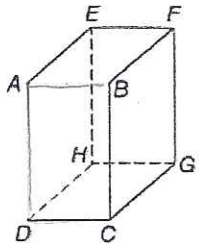
NAME: Answer Key DATE:_____ HOUR:_____

Geometry: Section 3.1-3.3 Quiz Review

1) Use the image to the right to answer questions 1 – 4.



a) name all planes parallel to Plane ABE

plane DCG

b) name all segments that are skew to $\overline{DC}$

$\overline{FG}, \overline{EH}, \overline{AE}, \overline{BF}$

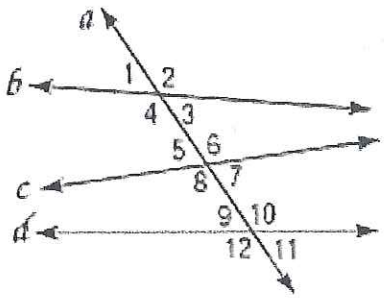
c) name all segments that intersect $\overline{EA}$

$\overline{AD}, \overline{AB}, \overline{EF}, \overline{HE}$

d) name all segments parallel to $\overline{BC}$

$\overline{AD}, \overline{EH}, \overline{FG}$

2) Classify the relationship between each pair of angles as *alternate interior*, *alternate exterior*, *corresponding*, or *consecutive interior* angles.



a) < 1 and < 5 — corresponding

b) < 3 and < 5 — Alt Int

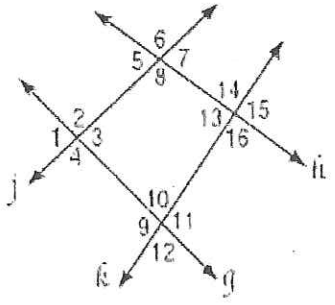
c) < 12 and < 2 — Alt Ext

d) < 4 and < 9 — Cons Int

e) < 8 and < 4 — Corresponding

f) < 1 and < 7 — Alt Ext

3) Identify the transversal connecting each pair of angles. Then classify the relationship between each pair of angles.



a) < 6 and < 16 — Alt Ext, h

b) < 10 and < 13 — Cons Int, k

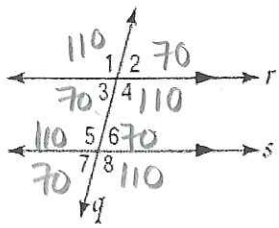
c) < 2 and < 10 — Corr, g

d) < 12 and < 14 — Alt Ext, k

e) < 5 and < 13 — Corr, h

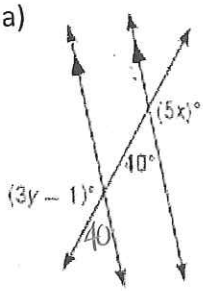
f) < 3 and < 8 — Cons Int, j

4) In the image below the m < 2 = 70. Calculate the measures for each of the other listed angles.



5) For each for the following, calculate the measure of all variables.

a)



$3y-1+40=180$

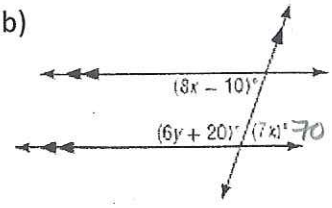
$y=47$

$40+5x=180$

$\frac{5x}{5}=\frac{140}{5}$

$x=28$

b)



$8x-10=7x$

$-10=-x$

$10=x$

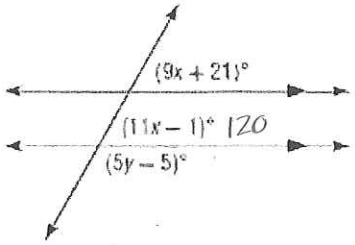
70

$6y+20+70=180$

$6y+90=180$

$6y=90$ $y=15$

c)



$11x-1=9x+21$

$2x=22$

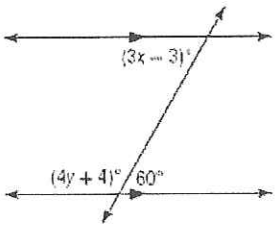
$x=11$

120

$60=5y-5$

$65=5y$ $y=13$

d)



$3x-3=60$

$3x=63$

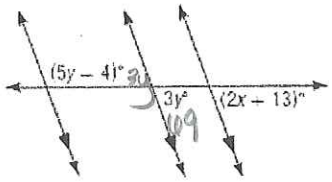
$x=21$

$4y+4+60=180$

$4y=116$

$y=29$

e)



$5y-4+3y=180$

$8y=184$

$y=23$

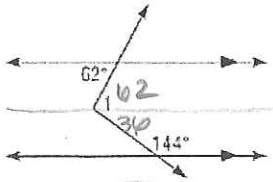
109

$2x-13=69$

$2x=82$

$x=41$

f)



62

36

98

6) For each pair of order pairs, calculate the slope of the line passing through them.

a) (2,3) and (-1,8)

$\frac{8-3}{-1-2}=\frac{5}{-3}=\frac{-5}{3}$

b) (10,8) and (7,15)

$\frac{15-8}{7-10}=\frac{7}{-3}=\frac{-7}{3}$

c) (-1,-3) and (4,2)

$\frac{2--3}{4--1}=\frac{5}{5}=1$

7) Determine whether $\overleftrightarrow{AB}$ *and* $\overleftrightarrow{MN}$ are parallel, perpendicular, or neither.

a) *A*(0, 3), *B*(5, -7), *M*(-6, 7), *N*(-2, -1)

$AB=\frac{-7-3}{5-0}=\frac{-10}{5}=-2$

$mN=\frac{7--1}{-6--2}=\frac{8}{-4}=-2$

parallel

b) *A*(-1, 4), *B*(2, -5), *M*(-3, 2), *N*(3, 0)

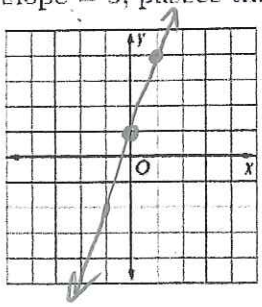
$AB=\frac{-5-4}{2+1}=\frac{-9}{3}=-3$

$mN=\frac{0-2}{3+3}=\frac{-2}{6}=\frac{-1}{3}$

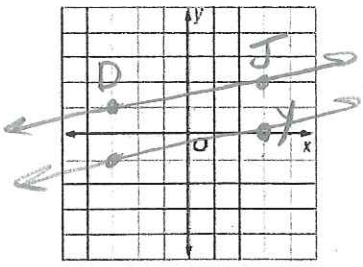
Neither

8) Graph the line that satisfies each of the following conditions.

a) slope = 3, passes through $A(0, 1)$



b) passes through $Y(3, 0)$, parallel to $\overline{DJ}$ with $D(-3, 1)$ and $J(3, 3)$



9) After Take Two began renting DVDs at their video store, business soared. Between 2005 and 2010, profits increased at an average rate of $9000 per year. Total profits in 2010 were $45,000. If profits continue to increase at the same rate, what will the total profit be in 2014?

slope

$9000(4) + 45000 = \$81,000$

10) The *pitch* of a roof is the number of feet the roof rises for each 12 feet horizontally. If a roof has a pitch of 8, what is its slope expressed as a positive number?

$\frac{8}{12} = \frac{2}{3}$

11) A daily newspaper had 12,125 subscribers when it began publication. Five years later it had 10,100 subscribers. What is the average yearly rate of change in the number of subscribers for the five-year period?

$\frac{10100 - 12125}{5} = -405$