Geometry Review Sheet #2
Date Due: **December 2, 2011**

Name Key

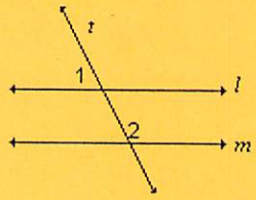
1. Which is an equation of the line that passes through the point (-1, 5) and is parallel to the *y*-axis?

(1) $y = -1$
(2) $y = 5$
(3) $x = -1$
(4) $x = 5$

2. If point *A* is not on plane *P*, how many lines can be drawn through point *A* that are parallel to plane *P*?

(1) 1
(2) 2
(3) 0
(4) infinite

3.



In the diagram, parallel lines *l* and *m* are cut by transversal *t*. Which statement about angles 1 and 2 *must* be true?

(1) $\angle 1 \cong \angle 2$.
(2) $\angle 1$ is a complement to $\angle 2$.
(3) $\angle 1$ is a supplement to $\angle 2$.
(4) $\angle 1$ and $\angle 2$ are right angles.

4. If *C* is the midpoint of $\overline{AB}$ and *D* is the midpoint of $\overline{AC}$, which statement is true?

(1) $AC > BC$
(2) $AD < CD$
(3) $DB = AC$
(4) $DB = 3CD$

5. Which letter has point symmetry but *not* line symmetry?

(1) **H**
(2) **S**
(3) **T**
(4) **X**

6. The point *R*(-2, 5) is reflected in the *x*-axis. In which quadrant does the image of point *R* lie?

(1) I
(2) II
(3) III
(4) IV

7. Let *p* represent "The outside temperature is 30° C," and let *q* represent "It is summer." Write in symbolic form, using *p* and *q*, "If it is not summer, then the outside temperature is not 30° C."

(1) $p \rightarrow q$
(2) $\sim p \rightarrow \sim q$
(3) $\sim q \rightarrow \sim p$
(4) $q \rightarrow p$

8. In three-dimensional space, two planes are parallel and a third plane intersects both of the parallel planes. The intersection of the planes is a

(1) plane
(2) point
(3) pair of parallel lines
(4) pair of intersecting lines

9. A translation moves *P*(4, 4) to *P'*(6, 1). Find the coordinates of the image of (-3, 2) under the same translation.

T(2, -3)

(1) (-5, 5)
(2) (-6, 4)
(3) (2, -3)
(4) (-1, -1)

(-1, -1)

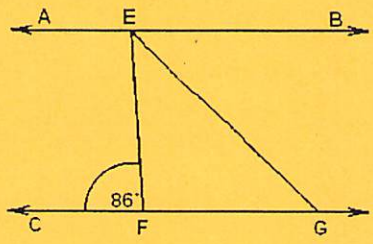
Short Answer

Please show all work on a separate piece of paper and/or graph paper.

10. Given the points $A(2, 3)$, $B(-4, 3)$, $C(5, -1)$, and $D(1, k)$. If $\overline{AB} \parallel \overline{CD}$, find the value of k.

11. The slope of $\overleftrightarrow{RU}$ is $\frac{3}{5}$. If $\overleftrightarrow{RU} \parallel \overleftrightarrow{ST}$ and the slope of $\overleftrightarrow{ST}$ is $\frac{x-6}{x}$, what is the value of x?

12. In the accompanying diagram, $\overleftrightarrow{AEB} \parallel \overleftrightarrow{CFG}$, $\overline{EG}$ bisects $\angle BEF$, and $m\angle EFC = 86$. Find $m\angle EGF$.



13. What is the equation for the perpendicular bisector of the line segment whose endpoints are (–7, 2) and (–1,–6)?

14. The coordinates of ΔJRB are $J(1,-2)$, $R(-3,6)$, and $B(4,5)$. What are the coordinates of the vertices of its image after the transformation $T_{2,-1} \circ r_{y\text{-axis}}$

15. If a line segment has endpoints $A(3x + 5, 3y)$ and $B(x - 1, -y)$, what are the coordinates of the midpoint of $\overline{AB}$?

16.

Rectangle $ABCD$	Rectangle $A'B'C'D'$
$A(2, 4)$	$A'(3, 1)$
B	$B'(-5, 1)$
$C(2, -1)$	$C'(3, -4)$
$D(-6, -1)$	D'

A design was constructed by using two rectangles $ABCD$ and $A'B'C'D'$. Rectangle $A'B'C'D'$ is the result of a translation of rectangle $ABCD$. In the table of translations, what are the coordinates of points B and D'?

17. If $\overleftrightarrow{AB}$ intersects $\overleftrightarrow{CD}$ at E, $m\angle AEC = 3x$, and $m\angle AED = 5x - 60$, find the value of x.

18. Determine the distance between point $A(-1,-3)$ and point $B(5,5)$.

RS #2

10. Slope AB $= \frac{3-3}{2--4} = \frac{0}{6}$

Slope CD $= \frac{0}{4} = \frac{-1-k}{5-1}$ $\boxed{k=-1}$

11. $\frac{3}{5} = \frac{x-6}{x}$ $\quad 5x-30=3x$

$-30=-2x$

$\boxed{x=15}$

12. $m\angle BEF = 86^\circ$ alt int $\angle$'s

$m\angle GEF = 43^\circ$ angle bisector

$m\angle EFG = 94^\circ$ supp to $\angle EFC$

$m\angle EGF = 43^\circ$ int $\angle$'s $\triangle = 180^\circ$

13. $M = (-4, -2)$

$m = \frac{8}{-6} = -\frac{4}{3}$ $\quad m_{\perp} = \frac{3}{4}$

$\boxed{y+2 = \frac{3}{4}(x+4)}$

$\boxed{y = \frac{3}{4}x + 1}$

14. $J(1,-2) \xrightarrow{r_{y\text{-axis}}} J'(-1,-2) \xrightarrow{T_{\langle 2,1\rangle}} \boxed{J''(1,-3)}$

$R(-3,6) \longrightarrow R'(3,6) \rightarrow \boxed{R''(5,5)}$

$B(4,5) \longrightarrow B'(-4,5) \rightarrow \boxed{B''(-2,4)}$

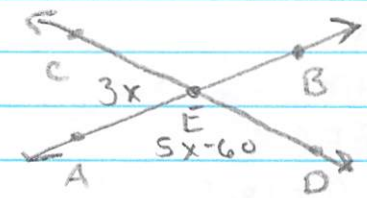
15. $M = \left(\frac{3x+5+x-1}{2}, \frac{3y-y}{2} \right)$

$= \left(\frac{4x+4}{2}, \frac{2y}{2} \right) = (2x+2, y)$

16. Rule: $T_{(1,-3)}$

$B: (-6, 4)$
$D': (-5, -4)$

17.



$3x + 5x - 60 = 180$
$8x - 60 = 180$
$8x = 240$
$x = 30$

18. $d = \sqrt{(-1-5)^2 + (-3-5)^2}$
$= \sqrt{(-6)^2 + (-8)^2}$
$= \sqrt{100}$
$\boxed{d = 10}$