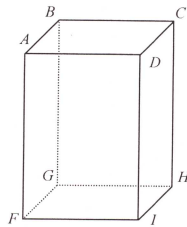


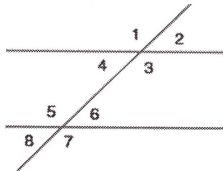
**Multiple Choice**

For #1-2, refer to the figure to the right.



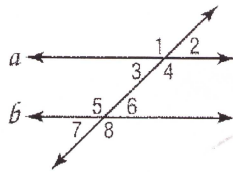
- B 1. Identify the plane parallel to plane  $ACD$ .  
 A. plane  $ADI$  C. plane  $DCH$   
 B. plane  $IGH$  D. plane  $ABG$
- A 2. Which segment is skew to  $\overline{HI}$ ?  
 A.  $\overline{BC}$  C.  $\overline{DI}$   
 B.  $\overline{GH}$  D.  $\overline{CH}$

In #3 and 4, using the figure to the right, name the pair of angles given.



- 3)  $\angle 2$  and  $\angle 4$   
Vertical angles
- 4)  $\angle 3$  and  $\angle 6$   
consecutive interior angles

For #5-6, refer to the figure to the right.



- 75 5) Given  $a \parallel b$  and  $m\angle 4 = 105$ , find  $m\angle 6$ .  
 $m\angle 4 + m\angle 6 = 180$   
 $105 + m\angle 6 = 180$   
 $-105$   
 $\underline{-105}$   
 $75$
- 110 6) Given  $a \parallel b$  and  $m\angle 1 = 110$ , find  $m\angle 5$ .

- 5 7) What is the distance between these lines:  
 $x = 3$  and  $x = 8$   $|3 - 8| = |-5| = 5$

- 14 8) What is the slope of a line perpendicular to the line containing  $(-13, 7)$  and  $(1, 8)$ .

$m = \frac{8-7}{1+13} = \frac{1}{14}$  opp rec:  $-\frac{14}{1} = -14$

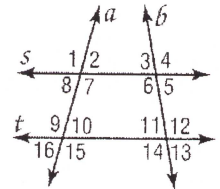
- 9) Determine whether  $\overline{WX}$  and  $\overline{YZ}$  are parallel, perpendicular, or neither. Neither

$W(5, -8) X(3, -2), Y(-4, 7), Z(2, 5)$

$\frac{-2+8}{3-5} = \frac{6}{-2} = -3$        $\frac{5-7}{2+4} = \frac{-2}{6} = -\frac{1}{3}$

For #10-12, refer to the figure to the right.

- 10) Given  $\angle 2 \cong \angle 10$ , what postulate or theorem justifies that  $s \parallel t$ ?



corresponding  $\angle$ s postulate converse

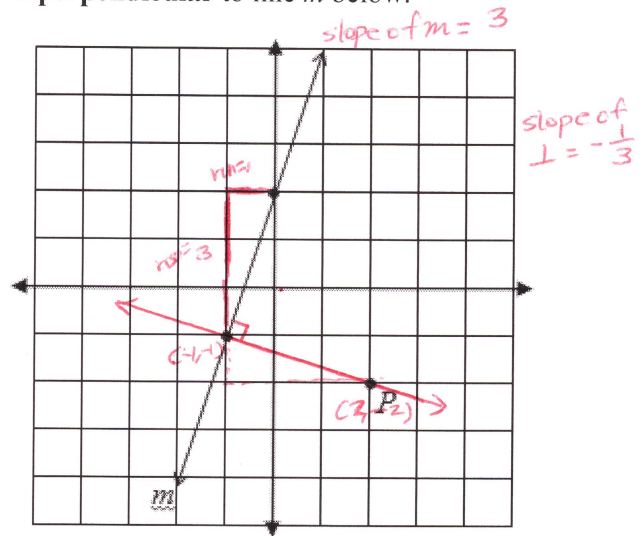
- 11) If  $\angle 7 \cong \angle 9$ , what postulate or theorem justifies that  $s \parallel t$ ?

alternate interior  $\angle$ s theorem postulate

- 12) If  $s \parallel t$ , then by the Alternate Exterior Angles Theorem, which angle pair must be congruent?

$\angle 1 \cong \angle 15$ ;  $\angle 2 \cong \angle 16$ ;  $\angle 3 \cong \angle 13$ ;  $\angle 4 \cong \angle 14$

- 13) (a) Graph/construct the line that contains P and is perpendicular to line  $m$  below.



- (b) Find the exact distance between P and line  $m$  above.  $\sqrt{10}$

$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$   $C(-1, -1), (2, -2)$   
 $d = \sqrt{(2 - (-1))^2 + (-2 - (-1))^2}$   
 $\sqrt{3^2 + (-1)^2}$   
 $\sqrt{9 + 1}$   
 $\sqrt{10}$

14) Using the figure to the right:

a) What is the slope of a line perpendicular to line  $b$ ? undefined

b) Write the equation of  $\overleftrightarrow{SP}$  in slope-intercept form.

$y = 2x - 4$

c) Write the equation in slope-intercept form of the line parallel

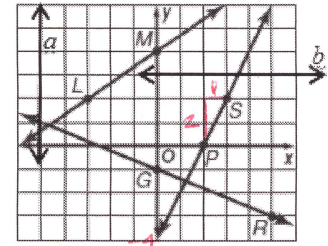
to  $\overleftrightarrow{SP}$  that contains  $(6, -8)$ .  $y = 2x - 20$

$m = 2$   
 $y = mx + b$   
 $-8 = 2(6) + b$   
 $-8 = 12 + b$   
 $-20 = b$

d) Write the equation of a line in slope-intercept form perpendicular

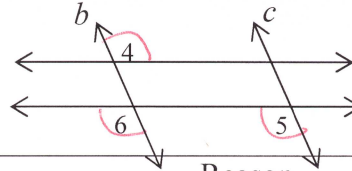
to  $\overleftrightarrow{SP}$  that contains  $(2, 9)$ .  $y = -\frac{1}{2}x + 10$

$m \text{ of } \perp = -\frac{1}{2}$   
 $y = mx + b$   
 $9 = -\frac{1}{2}(2) + b$   
 $9 = -1 + b$   
 $10 = b$



15) Given:  $\angle 4 \cong \angle 5$  and  $\angle 4 \cong \angle 6$

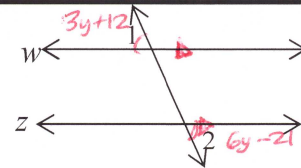
Prove:  $b \parallel c$



Statement	Reason
1. $\angle 4 \cong \angle 5$ and $\angle 4 \cong \angle 6$	1. Given
2. $\angle 5 \cong \angle 6$	2. Substitution / Transitive Prop.
3. $b \parallel c$	3. corresponding $\angle$ postulate converse

16) Given:  $w \parallel z$ ,  $m\angle 1 = (3y + 12)^\circ$ ,  $m\angle 2 = (6y - 21)^\circ$

Prove:  $y = 11$

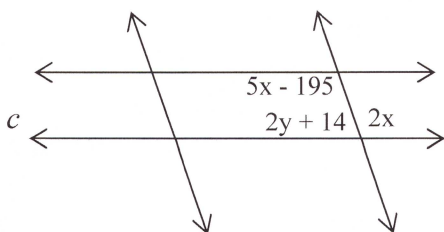


Write the letter of the reason for each statement.

Statement	Reasons
1. $w \parallel z$ , $m\angle 1 = (3y + 12)^\circ$ , $m\angle 2 = (6y - 21)^\circ$	<u>E</u>
2. $\angle 1 \cong \angle 2$	<u>O</u>
3. $m\angle 1 = m\angle 2$	<u>J</u>
4. $3y + 12 = 6y - 21$	<u>K</u>
5. $12 = 3y - 21$	<u>L</u>
6. $33 = 3y$	<u>G</u>
7. $11 = y$	<u>H</u>
8. $y = 11$	<u>B</u>

- A) Corresp. Angles Post. CONVERSE
- ~~B~~) Symmetric Prop. of equality
- C) Alt. Int. Angles Theorem
- D) Corresponding Angles Postulate
- ~~E~~) Given
- F) Alt. Ext. Angles Th. CONVERSE
- ~~G~~) Addition Prop. of equality
- ~~H~~) Division Prop. of equality
- I) Transitive Prop. of equality
- ~~J~~) Def. of congruency
- ~~K~~) Substitution of equality
- ~~L~~) Subtraction Prop. of equality
- M) Simplify
- N) Reflexive Prop. of equality
- ~~O~~) Alt. Ext. Angles Theorem

17) Solve for  $x$  65 and  $y$  18



$5x - 195 = 2x$   
 $-5x$   
 $-195 = -3x$   
 $-3$   
 $65 = x$

$5(65) - 195$   
 $325 - 195$   
 $130$

$180 - 130$   
 $50$

$2y + 14 = 50$   
 $-14$   
 $2y = 36$   
 $\frac{2y}{2} = \frac{36}{2}$   
 $y = 18$