Geometry TEST REVIEW Name _____

Parallel Lines

Choose the correct classification for each pair of angles. Write the letter of the answer in the space provided.

D 1. ∠2, ∠10

A 2. ∠5, ∠11

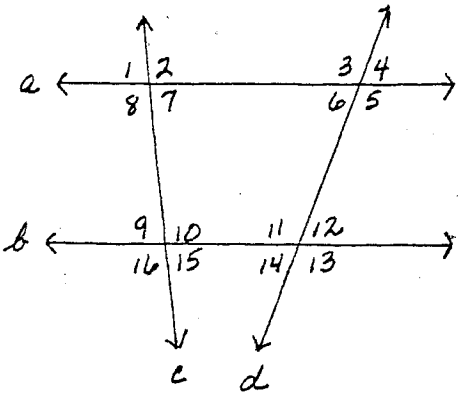
B 3. ∠4, ∠8

E 4. ∠8, ∠11

C 5. ∠15, ∠14

A 6. ∠11, ∠15

D 7. ∠16, ∠14



a. alternate interior angles
b. alternate exterior angles
c. consecutive interior angles
d. corresponding angles
e. none of the above

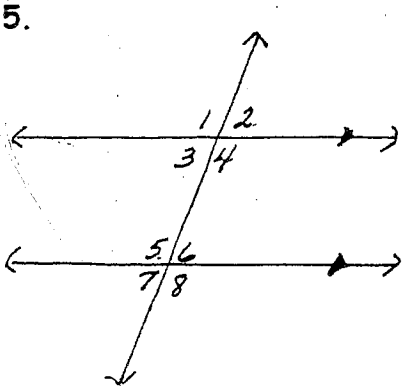
Complete. Use the diagram shown above.

8. *a* is a transversal to C and d.

9. Two angles that form alternate interior angles with ∠7 are ∠9 and ∠3.

10. Two angles that form consecutive interior angles with ∠11 are ∠10 and ∠6.

Solve. Use the diagram on the right for problems 11-15.



11. If ∠3 = 70°, then ∠6 = 70°

12. If ∠2 = 65°, then ∠7 = 65°

13. If ∠4 = 110°, then ∠6 = 70°

14. If ∠5 = 115°, then ∠2 = 65°

15. ∠3 = 9x + 1, ∠6 = 7x + 11

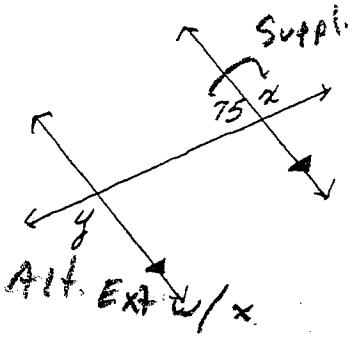
x = 5

$9x+1=7x+11$
$-7x \quad -7x$
$2x+1=11$
$-1 \quad -1$

$\frac{2x}{2}=\frac{10}{2}$

$x=5$

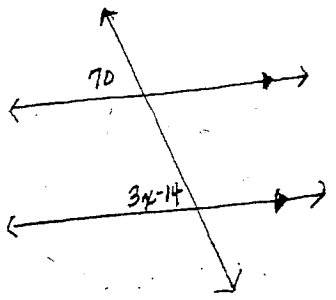
16.



$x = \underline{105}$

$y = \underline{105}$

17.



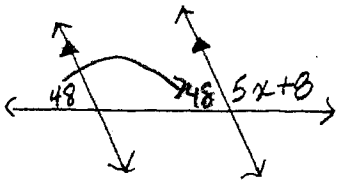
$70 = 3x - 14$

$84 = 3x$

$28 = x$

$x = \underline{28}$

18.



$x = \underline{24.8}$

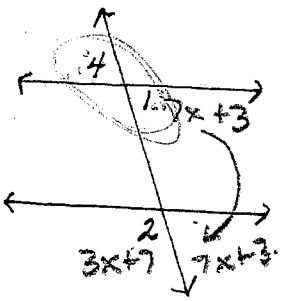
$48 + 5x + 8 = 180$

$5x + 56 = 180$

$5x = 124$

$x = 24.8$

19.



$\angle 1 = 7x + 3 = \angle 4$

$\angle 2 = 3x + 7$

$x = \underline{17}$

$\angle 4 = \underline{122}$

$7 \cdot 17 + 3$

$122°$

$3x + 7 + 7x + 3 = 180$

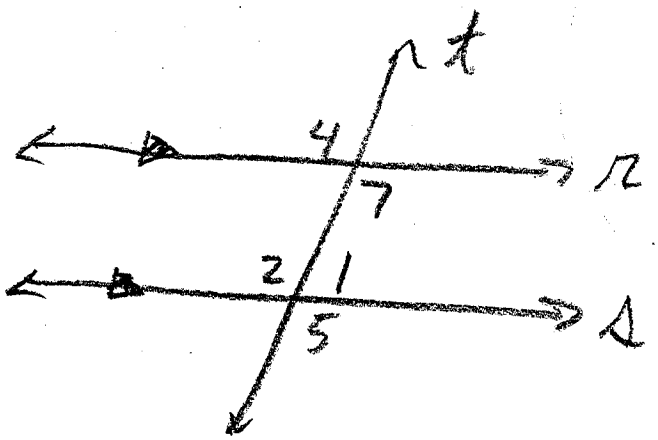
$10x + 10 = 180$

$10x = 170$

$x = 17$

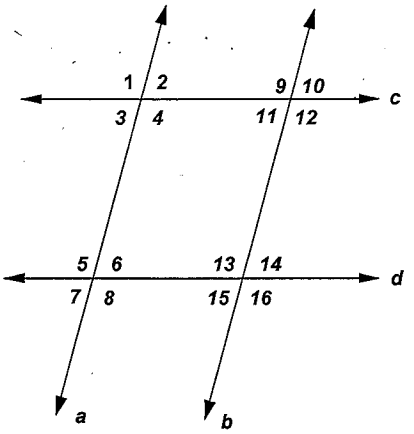
20. **Draw a diagram to meet the specified conditions. Include all labels.**

r || s, t is the transversal. ∠4 and ∠5 are alternate exterior angles. ∠2 and ∠4 are corresponding angles. ∠7 and ∠2 are alternate interior angles. ∠7 and ∠1 are same-side interior angles.



GEOMETRY – TEST REVIEW Name Key hr___
Chapter 3 – Parallel and Perpendicular Lines

Use the diagram for questions 1 – 4. In the diagram, a||b and c||d. Find the measure of each angle. Tell which postulate(s) and theorem(s) you used to determine the angle measure.



1. $m\angle 1 = 104°$ $m\angle 8 =$ 104°

   Reason: Alternate Exterior Angle Theorem

2. $m\angle 6 = 34°$ $m\angle 13 =$ 146°

   Reason: Consecutive Interior Angle Theorem

3. $m\angle 2 = 55°$ $m\angle 5 =$ 125°

   Reason: Corresponding Angle Postulate (∡2 ≅ ∡6)

   Example: Supplement Angle Theorem (∡6 + ∡5)

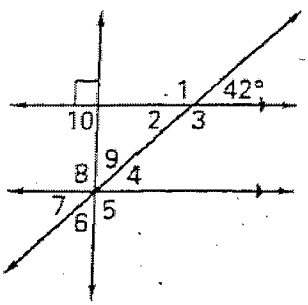
4. $m\angle 10 = 71°$ $m\angle 7 =$ 71°

   Reason: Alternate Exterior Angle Theorem (∡10 ≅ ∡15)

   Example: Corresponding Angle Postulate (∡15 ≅ ∡7)

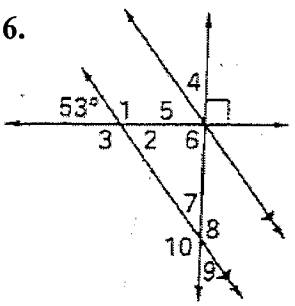
Find the measure of all labeled angles in the diagram.

5.



∡1 = 138°
∡2 = 42°
∡3 = 138°
∡4 = 42°
∡5 = 90°
∡6 = 48°
∡7 = 42°
∡8 = 90°
∡9 = 48°
∡10 = 90°

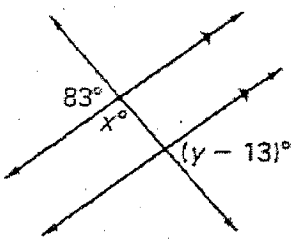
6.



∡1 = 127°
∡2 = 53°
∡3 = 127°
∡4 = 37°
∡5 = 53°
∡6 = 90°
∡7 = 37°
∡8 = 143°
∡9 = 37°
∡10 = 143°

Find the value of x and y.

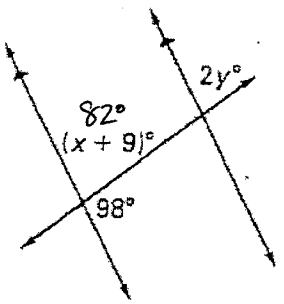
7.



83 + x = 180
x = 97

y − 13 = 83
y = 96

8.

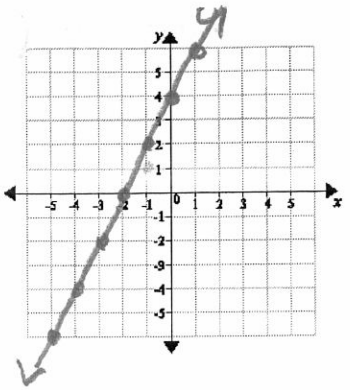


x + 9 + 98 = 180
x + 107 = 180
x = 73

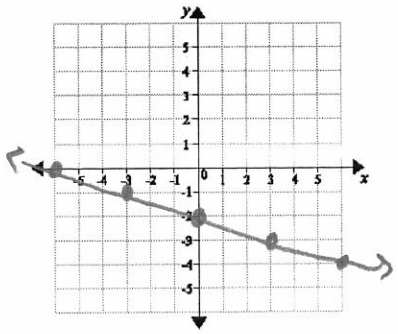
2y = 82
y = 41

Graph the following lines.

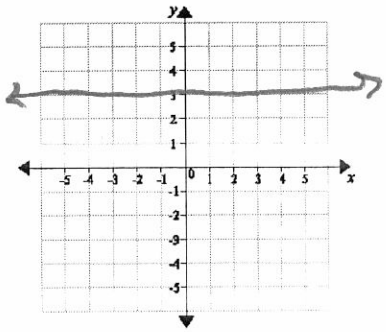
9. $y = 2x + 4$



10. $y = -\frac{1}{3}x - 2$

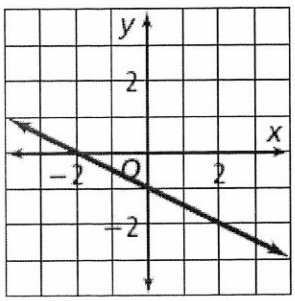


11. $y = 3$

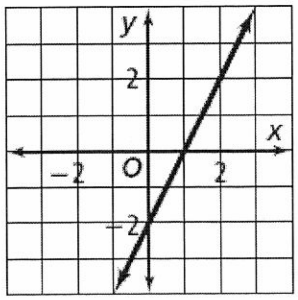


Write the equations of the lines in slope-intercept form.

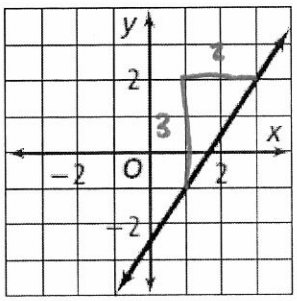
12. $y = -\frac{1}{2}x - 1$



13. $y = 2x - 2$



14. $y = \frac{3}{2}x - 2.5$



Identify the slope and y-intercept of each equation.

15. $y = -7$

$m = 0$

$b = -7$

16. $y = \frac{2}{5}x + 2$

$m = 2/5$

$b = 2$

17. $y = -\frac{4}{3}x - 1$

$m = -4/3$

$b = -1$

18. $y = x$

$m = 1$

$b = 0$

19. $y = 5x$

$m = 5$

$b = 0$

20. If the equation of a line is $y = -\frac{3}{2}x + 2$, the perpendicular slope is $2/3$ and the parallel slope is $-3/2$.

Write an equation of the line in slope-intercept form using the given information.

21. m: $\frac{2}{3}$, (-6, 4)

$x \quad y$

$y = mx + b$

$4 = \frac{2}{3}(-6) + b$

$4 = -4 + b$

$+4 \quad +4$

$8 = b$

$y = \frac{2}{3}x + 8$

22. $(5, 8)$ and $(4, 6)$

$x_1 \; y_1 \qquad x_2 \; y_2$

$\frac{y_2 - y_1}{x_2 - x_1} = \frac{6-8}{4-5} = \frac{-2}{-1} = 2$

$y = mx + b$

$8 = 2(5) + b$

$8 = 10 + b$

$-10 \quad -10$

$-2 = b$

$y = 2x - 2$

23. parallel to $y = 4x - 19$, through $(0, 7)$ $m = 4$

$x \quad y$

$y = mx + b$

$7 = 4(0) + b$

$7 = 0 + b$

$7 = b$

$y = 4x + 7$

24. perpendicular to $y = -\frac{2}{3}x - 11$ through $(-12, 3)$ $m = \frac{3}{2}$

$x \quad y$

$y = mx + b$

$3 = \frac{3}{2}(-12) + b$

$3 = -18 + b$

$+18 \quad +18$

$21 = b$

$y = \frac{3}{2}x + 21$