Extra Practice

Math 10/20 · Mr. Merrick · January 20, 2026

1. Find the equations of the two lines that are 4 units from the line $5x + 12y = 8$.

2. A line intersects the positive x- and y-axes and contains the point $P(-2.5, 3)$. One of its intercepts is 4. Find the slope of the line.

3. Let b be a real number. The two lines whose equations are $2x - y = 5b$ and $4x + y = 6b^2 - 17b$ intersect at a point P. Determine all values of b so that P lies below the line $x - y = 10$.

4. The vertices of $\triangle ABC$ are $A(0,0)$, $B(8,6)$, and $C(3,5)$. Find the equation of the vertical line that divides the triangle into two regions of equal area.

5. Two of the vertices of $\triangle ABC$ are $A(-2, 6)$ and $B(4, -2)$. The third vertex C lies on the line $2x - 3y = 6$. Find the coordinates of C if the area of $\triangle ABC$ is 32.

6. Line L_1 has x-intercept at $A(8,0)$. Line L_2 is perpendicular to L_1 and has y-intercept at $B(0,6)$. The two lines intersect at a point C on the line $y = x$. Find the equations of the lines L_1 and L_2.

7. The triangle ABC has vertices $A(3, 2)$, $B(8, 2)$, and $C(5, 6)$.

   (a) Calculate the area of this triangle.

   (b) Calculate the length of the altitude AD.

   (c) A line parallel to AD intersects AB at M and BC at N. If $MN = 3$, find the coordinates of the points M and N.