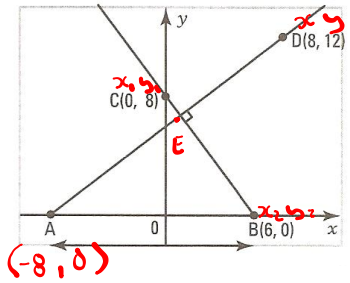
Analytical Geometry Problems

1. Consider the figure on the right.
Calculate the distance between A and B.



① $\overline{CB}$: $a = \frac{0-8}{6-0} = -\frac{8}{6} = -\frac{4}{3}$

$\therefore a_{\overline{AD}} = \frac{3}{4}$

② $\overline{AD}$: $y = ax + b$

$12 = \frac{3}{4}(8) + b$

$12 = 6 + b$

$6 = b$

$y = \frac{3}{4}x + 6$

③ A: $0 = \frac{3}{4}x + 6$

$\frac{4}{3}\left(-6 = \frac{3}{4}x\right)$

$-8 = x$

④ $d(A,B) = |-8 - 6| = 14$

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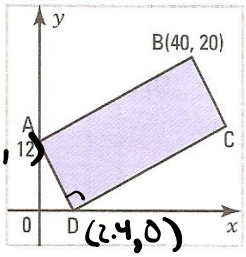
2. Consider the rectangle on the right. Find the area of this rectangle to the nearest square unit.



Rectangle: parallel sides (opposite)
perpendicular adjacent sides

$A = LW$

$A = 499\ u^2$

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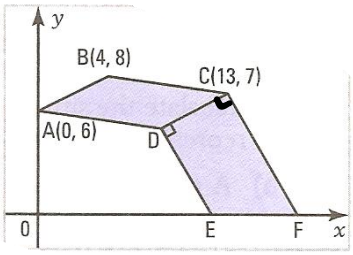
3. Consider the parallelogram ABCD and the right trapezoid CDEF represented on the right. Determine the x-coordinate of point F.



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