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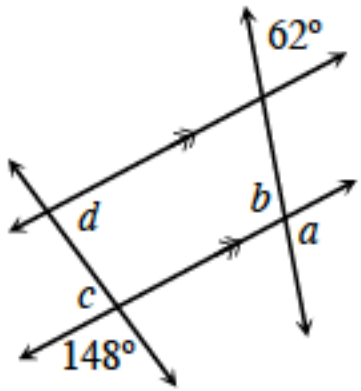
**2-66.** Examine the diagram below. Then use the information provided in the diagram to find the measures of angles $a$, $b$, $c$, and $d$. For each angle, name the relationship from your Angle Relationships Toolkit that helped justify your conclusion. For example, did you use vertical angles? If not, what type of angle did you use?



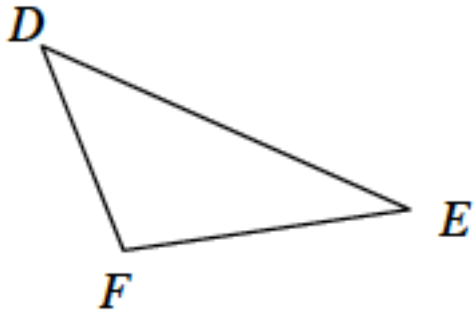

a =

b =

c =

d =

**2-67.** Examine the triangle below.




a. If $m\angle D = 48°$ and $m\angle F = 117°$, then what is $m\angle E$?

b. Solve for $x$ if $m\angle D = 4x + 2°$, $m\angle F = 7x - 8°$, and $m\angle E = 4x + 6°$. Then find $m\angle D$.

c. If $m\angle D = m\angle F = m\angle E$, what type of triangle is $\Delta FED$?

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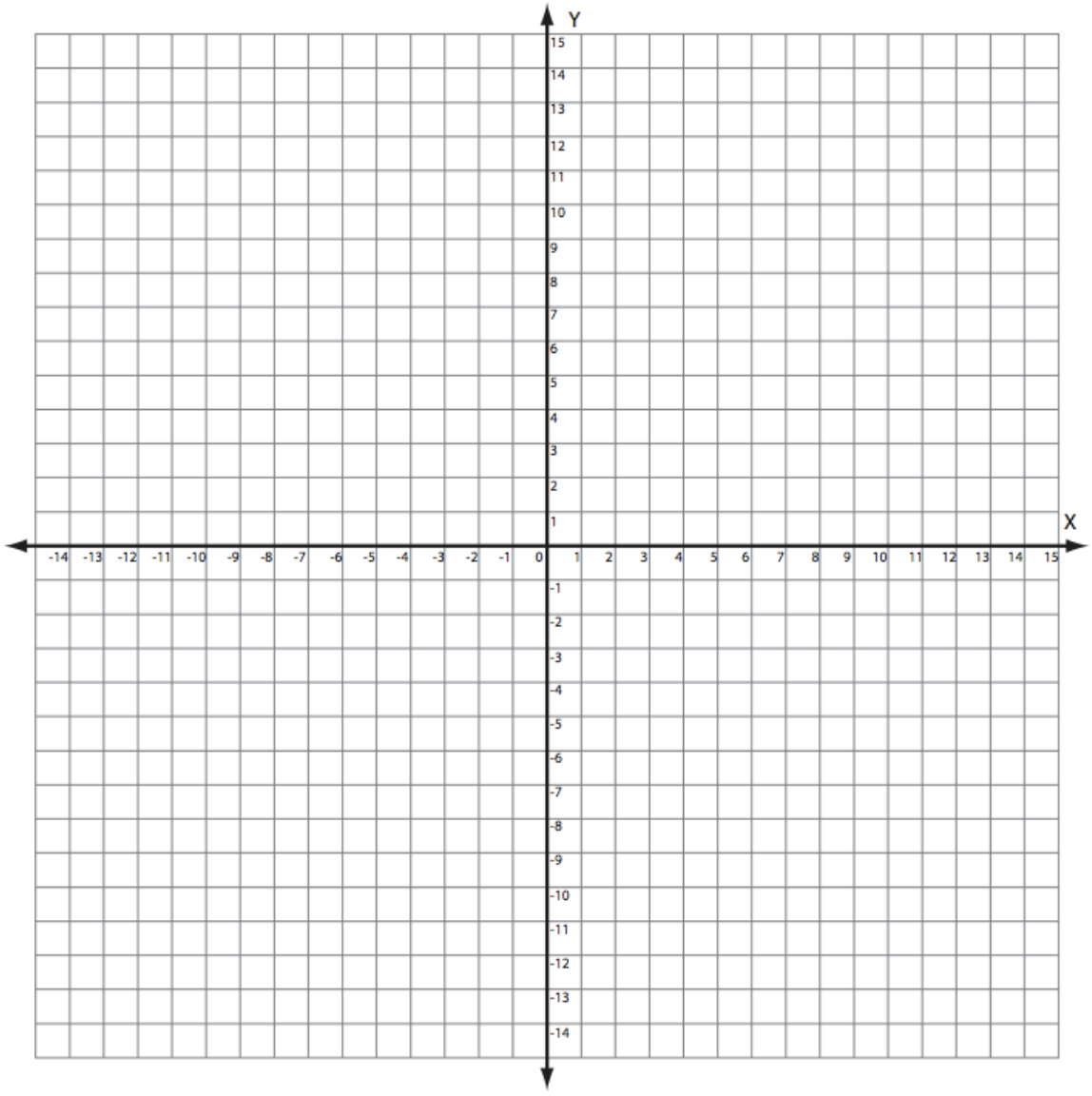
**2-68.** Plot $\Delta ABC$ on graph paper if $A$ (6, 3), $B$ (2, 1), and $C$ (5, 7).




a. $\Delta ABC$ is rotated about the origin 180° to become $\Delta A'B'C'$. Name the coordinates of $A'$, $B'$, and $C'$.

b. This time $\Delta ABC$ is rotated 180° about point $C$ to form $\Delta A''B''C''$. Name the coordinates of $B''$.

c. If $\Delta ABC$ is rotated 90° clockwise ( ↻ ) about the origin to form $\Delta A'''B'''C'''$, what are the coordinates of point $A'''$?

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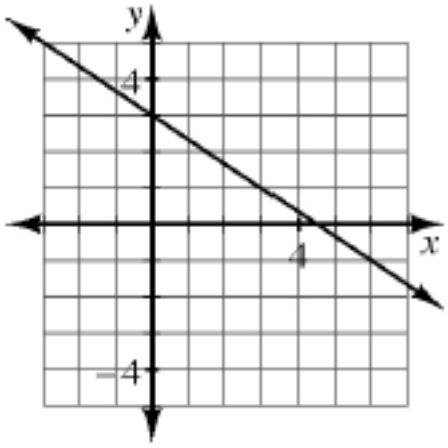
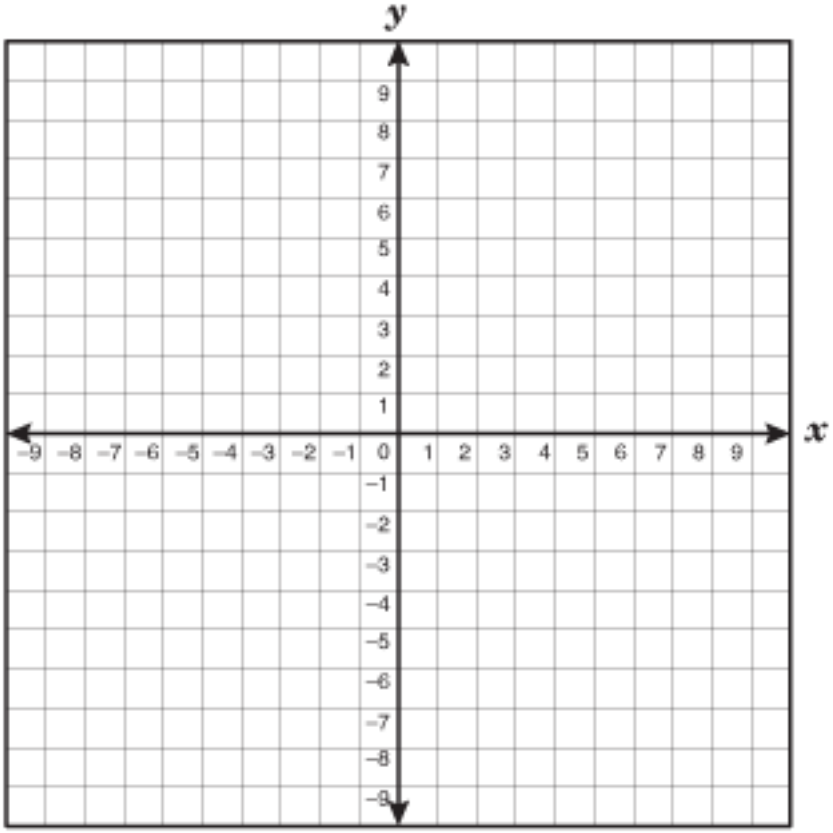
- **2-69.** Examine the graph below.




Find the equation of the line. Is the line $y = \frac{3}{2}x + 1$ perpendicular to this line? How do you know?

a. On graph paper, graph line AB using points $A$ (–2, 4) and $B$ (4, 7).




b. Then find the equation of line AB.

AB =

c. Then find the equation of a line perpendicular to line AB and runs through point (0, -3).

$y$ =