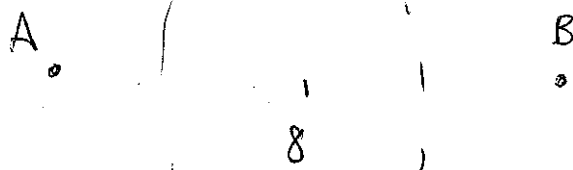
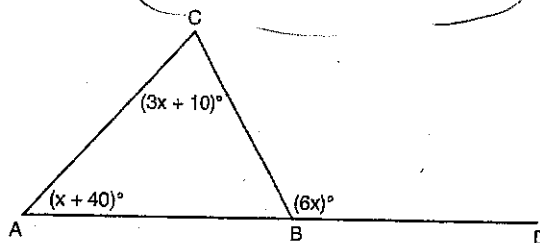


7 Towns A and B are 16 miles apart. How many points are 10 miles from town A and 12 miles from town B ?

- 1) 1
- 2) 2
- 3) 3
- 4) 0



8 In the diagram of $\triangle ABC$ below, \overline{AB} is extended to point D .



If $m\angle CAB = x + 40$, $m\angle ACB = 3x + 10$, $m\angle CBD = 6x$, what is $m\angle CAB$?

- 1) 13
- 2) 25
- 3) 53
- 4) 65

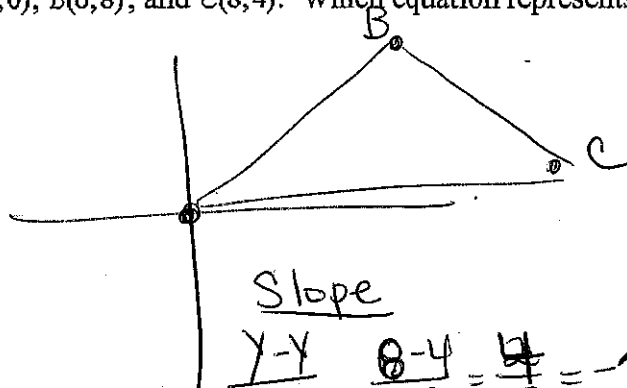
$$4x + 50 = 6x \qquad 25 + 40 = 65$$

$$50 = 2x$$

$$x = 25$$

9 Triangle ABC has vertices $A(0,0)$, $B(6,8)$, and $C(8,4)$. Which equation represents the perpendicular bisector of \overline{BC} ?

- 1) $y = 2x - 6$
- 2) $y = -2x + 4$
- 3) $y = \frac{1}{2}x + \frac{5}{2}$
- 4) $y = -\frac{1}{2}x + \frac{19}{2}$



$$y - y_1 = m(x - x_1)$$

$$y - 6 = +\frac{1}{2}(x - 7)$$

$$y - 6 = \frac{1}{2}x - \frac{7}{2}$$

$$y = \frac{1}{2}x + \frac{5}{2}$$

Slope

$$\frac{y - y_1}{x - x_1} = \frac{8 - 4}{6 - 8} = \frac{4}{-2} = -2$$

Midpoint

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right) \Rightarrow \left(\frac{6 + 8}{2}, \frac{8 + 4}{2}\right) = (7, 6)$$