

$\frac{1}{480}$

23	115	1115
34	$\frac{34}{x}$	x
x	A	x B→C
$\sqrt{34^2-x^2}$	$\frac{\sqrt{34^2-x^2}}{x}$	x C→A

$$1 + \frac{\sqrt{34^2-x^2}}{x} = \frac{34}{x} + \frac{24}{60} \rightarrow \frac{\sqrt{34^2-x^2}}{x} = \frac{34}{x} - \frac{36}{60} \quad | \cdot 60x$$

$$60\sqrt{34^2-x^2} = 2040 - 36x \quad ( )^2$$

$$3600(1156-x^2) = 4161600 - 146880x + 1296x^2$$

$$4896x^2 - 146880x + 1116000 = 0 \quad || : 48$$

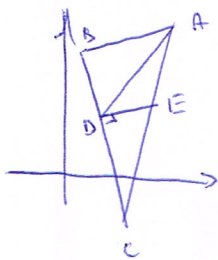
$$102x^2 - 3060x + 23250 = 0$$

$$48960x(x-30) = 0$$

$$x \neq 0 \quad | \boxed{x=30}$$

$$A \rightarrow C: \sqrt{34^2-30^2} = 16$$

2  
(480)



$DE \perp AD$  (given),  $D$  is on  $AD$

$$\frac{5}{3}x - \frac{4}{3} = \frac{1}{3}x + \frac{4}{3}$$

$$\frac{4x}{3} = \frac{8}{3}$$

$$\boxed{x=2} \quad D(2, 2)$$

$$m_{BC} \cdot m_{DE} = -1$$

$$\boxed{m_{BC} = -3}$$

$$\leftarrow m_{BC} \cdot \frac{1}{3} = -1$$

$$y - 2 = -3(x - 2) \rightarrow \boxed{y = -3x + 8}$$

AD is perpendicular to BC,  $A(x, x+2)$

$$x + 2 = \frac{1}{3}x - \frac{4}{3}$$

$$3\frac{1}{3} = \frac{2}{3}x \rightarrow \boxed{x=5} \quad A(5, 7)$$

$$y - 7 = \frac{1}{2}(x - 5)$$

$$y = \frac{1}{2}x + 4\frac{1}{2}$$

AB is perpendicular to BC,  $m = \frac{1}{2}$

$$A(5, 7) \quad m = \frac{1}{2}$$

$$\frac{1}{2}x + 4\frac{1}{2} = -3x + 8$$

$$3\frac{1}{2}x = 3\frac{1}{2} \rightarrow x = 1 \quad B(1, 5)$$

BC is perpendicular to AB,  $B$

$$2 = \frac{1+Cx}{2} \rightarrow Cx = 3$$

$$2 = \frac{5+Cx}{2} \rightarrow Cy = -1$$

(BC) is perpendicular to AB,  $C$

$$C(3, -1)$$