3a) In $\triangle ACE$ we have

A & C have same abscissa $x = 3$ so, $(AC) \parallel$ y-axis

And A & E have " ordinate $y = 0$ So, $(AE) \parallel$ x-axis (on)

but x-axis & y-axis are perp. (orth. normal system)

Thus, $\triangle ACE$ is right at A.

1pt

b) $Slope(CE) = \tan A\hat{E}C =$

(CE) is an increasing straight-line.

C & E on (d)

So, $\tan A\hat{E}C = Slope(d)$

$\tan A\hat{E}C = 2$

$A\hat{E}C = \tan^{-1}(2)$

$A\hat{E}C = 63.43^\circ$.

$A\hat{E}C + E\hat{C}A = 90^\circ$ (sum of base angles in a right $\triangle$)

Thus $E\hat{C}A = 26.56^\circ \simeq 27^\circ$ (rounded to the nearest degree).

1pt

4a) - Along x-axis starting from C move 4 steps in the $\ominus$ve sense

So $x_{\vec{CE}} = -4$.

- Along y-axis starting from C move 8 steps in the $\ominus$ve sense

So, $y_{\vec{CE}} = -8$.

$\vec{CE}(-4, -8)$

3/4 pt

b) (Δ) passes through C $\xrightarrow{t_{\vec{CE}}}$ (Δ')

$(\Delta') \parallel (\Delta)$ et (Δ') passes through E.

c) (Δ') is the image of (Δ) by $\vec{CE}$. (given)

So, $(\Delta) \parallel (\Delta')$

then $Slope(\Delta) = Slope(\Delta') = \frac{1}{4}$.

3/4 pt

& C belongs to (Δ)

So, E belongs to (Δ').

(Δ') : $\frac{y - y_E}{x - x_E} = a_{(\Delta')}$

$\frac{y - 0}{x + 1} = \frac{1}{4}$

$\boxed{(\Delta') : y = \frac{1}{4}x + \frac{1}{4}}$