*Key*

(1.) 1.5

(a) Among the points shown in the left-hand diagram, circle all possible points C that would make $\angle ABC$ exactly a right angle.

(b) Among the points shown in the center diagram, circle all possible points C that would make $\angle ACB$ an obtuse angle.

(c) Among the points shown in the right-hand diagram, circle the single point C that would make $\angle BAC$ closest to a zero angle.
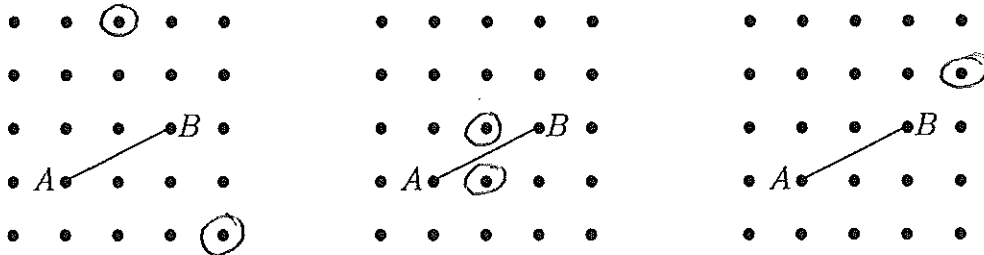

2. (a) Find the measurement of the non-reflex angle formed by the hands of a working clock at 4:37. Show clear work; round to the nearest hundredth if needed.

1.5
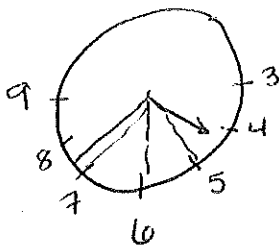
$2 \times 30° +$ part hour hand still has to go $+$ part minute hand has gone

$= 60° + 11.5°$ $+ 12°$

$\boxed{= 83.5°}$

Hour hand:
gone $\dfrac{37}{60_2} \times \cancel{30}°^{\!\!\!\!1} = 18.5°$

still to go $= 11.5°$

minute hand:
$2 \times 6° = 12°$ gone

(b) Name two times of day when the hands of a working clock form a $75°$ angle.

$\boxed{3:30 \text{ or } 8:30}$

$2 \times 30° + 15°$

$= 75°$

$8:30 \quad\uparrow\!\!\to 3:30$

3. In the diagram below, $\ell \parallel m$. Find the measures of the indicated angles. Clearly explain in sentences all necessary computations, using correct $m(\angle\_\_)$ notation throughout. You may mark additional angles if you wish. Do not judge any measurements by appearances.
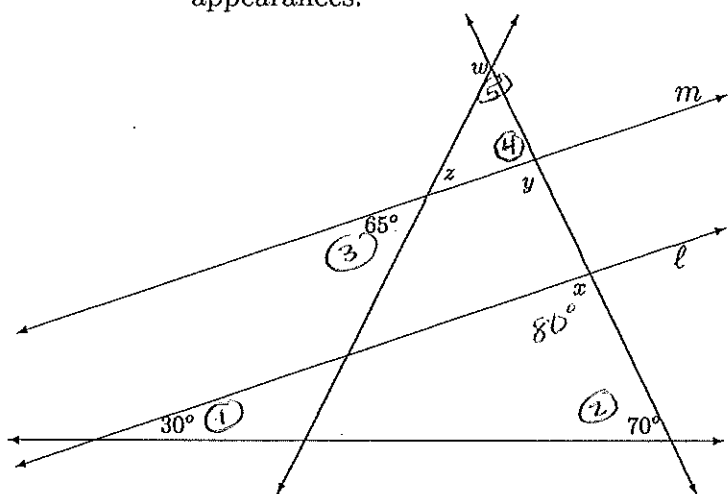
$\angle x$, $\angle①$, & $\angle②$ are in a triangle, so

$$m(\angle x) = 80°.$$

$\angle x$ & $\angle y$ are corresponding, so $m(\angle y) = 80°.$

$\angle z$ & $\angle③$ are vertical, so $m(\angle z) = 65°$

$\angle④$ + $\angle y$ are supplementary, so $m(\angle④) = 100°.$

$\angle z$, $\angle④$, & $\angle⑤$ are in a triangle, so $m(\angle⑤) = 15°.$

$\angle w$ + $\angle⑤$ are supplementary, so $m(\angle w) = 165°.$