ANSWERS

A) _____

B) _____ A _____ O _____ R

C) (_____ , _____)

A) In a polygon with *n* sides, the ratio of the sum of the measures of the exterior angles (one at each vertex) to the sum of the measure of the interior angles is $\frac{1}{8}$. How many diagonals does this polygon have, *originating from any single vertex*?

B) In baseball, home plate according to the MLB rulebook, has 3 right angles and dimensions shown at the right. Rules may be rules, but, as students of mathematics, we realize that *this shape cannot exist*. $m\angle ETA$ may be <u>close</u> to 90°, but $\angle ETA$ is **not** a right angle. Is interior $\angle ETA$ <u>A</u>cute, <u>O</u>btuse or <u>R</u>eflexive? Circle the correct letter in the answer blank above.
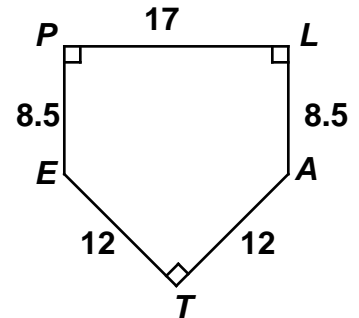
C) The diagonals of quadrilateral *ABCD* (*segments* $\overline{AD}$ and $\overline{BC}$) do <u>not</u> intersect. This is always the case for a <u>concave</u> quadrilateral. Note: Points *A*, *B*, *C*, *D*, and *E* all lie in the same plane. Assume *E* lies on $\overline{BC}$.
If $\overline{ADE} \perp \overline{BC}$, $AB = BC = 25$, $AC = 30$, $BD = BE + 3$, $AE = 3(BE+1)$, compute the ordered pair (DC, d), where *d* denotes <u>the absolute value of the difference</u> between the lengths of the diagonals.