ANSWERS

A) _____

B) _____

C)   (_____ , _____)

A) An equilateral triangle has sides of length 6.
Points A, B, C, D, E and F are trisection points of the sides.
What is the exact length of a segment that

- connects two of these points <u>not</u> on the same side of the triangle and
- is <u>not</u> parallel to any sides of the triangle?

Express your answer as an exact value in simplified form.

B) In $\triangle ABC$, $m\angle B = 150°$, $a = BC = 10$ and $b = AC = 15$.
Determine the exact value of $\sin(B + C)$.

C) The perimeter of a regular n-sided polygon is p. A simplified expression for the apothem of

the polygon in terms of p and n may be written in the form $\dfrac{p\cot(\frac{X}{n})}{Yn}$, where $\dfrac{X}{n}$ is the

degree-measure of an angle whose vertex is at the center of the regular polygon.
Determine the ordered pair (X, Y).