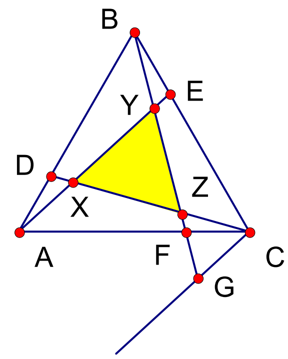
E. Area(ΔABE)= ¼ Area(ΔABC). To find Area(ΔABY), find ratio of bases AY to AE. Add parallel to AE from C, extend BF to G. $\Delta AYF \sim \Delta CGF$ gives $AY = 3CG$ $\Delta BYE \sim \Delta BGC$ gives $CG = 4YE$ so $AY = 12YE$ and Area(ΔABY) = (12/13) Area(ΔABE) = 3/13 Area(ΔABC). Removing 3 of these leaves Area(ΔXYZ) = (4/13) Area(ΔABC)= (4/13) $169\sqrt{3}$.



F. The k^{th} term in the expansion will be given by $\binom{10}{k}(4x^n)^{10-k}(\frac{x^{-3}}{2})^k$

$= C(x^{10n-nk-3k})$, where C is a numerical constant. x^0 insures that this is a constant term → $k = 10n/(n + 3) = 10 - 30/(n + 3)$ Thus, $n + 3$ must be a divisor of 30 = (2)(3)(5) The factors of 30 are: 1, 2, 3, 5, 6, 10, 15 and 30 so n may be 2, 3, 7, 12, and 27. The total is 51.