Def: The number p^* is said to approximate p to t significant digits (or figures) if t is the largest nonnegative integer such that

$$\frac{|p-p^*|}{|p|} < 5 * 10^{-t}$$

Example: In the previous example

$$\frac{|p-p^*|}{|p|} = 0.11622992 . 10^{-2} = 1.1622992 . 10^{-3}$$

Thus p^* approximates p to 3 significant digits.

When we round to have p^* approximate p to t significant digits we have to make p^* a t-digit number.

Ex: 0.378256 is approximated by 0.378 to 3 significant digits.

Ex: 0.00378256 is approximated by 0.00378 to 3 significant digits.