

4. Find the 6<sup>th</sup> term in the expansion of  $(2x^2 - 1/3x^2)^{10}$ .

Solution:  $T_{r+1} = {}^nC_r x^{n-r} y^r$  for  $(x+y)^n$

Hence for  $(2x^2 - 1/3x^2)^{10}$

$$T_6 = {}^{10}C_5 (2x^2)^5 \left(-\frac{1}{3x^2}\right)^5$$

$$= -\frac{10!}{5!5!} 32 \times \frac{1}{243}$$

$$= -\frac{896}{27}$$