30 write the equation of the tangent line:-

$$f(x)=\frac{x^3}{3}-\frac{3}{x^3} \quad \text{at} \quad x=-1$$

$$\rightarrow f(x)=\frac{x^3}{3}-3x^{-3}$$

نجد m او slope = $f'(x)$ عند -1

$$f'(x)=\frac{3x^2}{3}-3(-3)x^{-4}$$

$$=x^2+\frac{9}{x^4}$$

نعوض $x=-1$ في المشتقة

$$m=(-1)^2+\frac{9}{(-1)^4}=1+9=10$$

$$\therefore \text{slope}=10 \quad , \quad x=-1$$

لايجاد y نعوض عن x في المقران

$$\therefore y=\frac{(-1)^3}{3}-\frac{3}{(-1)^3}=\frac{-1}{3}-\frac{3}{-1}$$

$$=\frac{-1}{3}+\frac{3}{1}\times\frac{3}{3}=\frac{8}{3}$$

$$\left(-1,\frac{8}{3}\right)$$

the equation of the tangent:-

$$y-y_0=m(x-x_0)$$

$$y-\frac{8}{3}=10\left(x-\frac{8}{3}\right)$$

$$\rightarrow y-\frac{8}{3}=10x-\frac{80}{3}$$

$$+\frac{8}{3} \qquad +\frac{8}{3}$$

$$\therefore y=10x-\frac{72}{3}=10x-24$$