

$$2) f = 2x^4 + 12x^2 + (x+2)h$$

$$u = 2x^2 - 3x + (x+2)h$$

$$f(x,u) = \frac{1}{2x} \frac{d}{dx} h(x+2)$$

$$= \int \frac{x^2 (2x+2)}{-2x (x-2)} \rightarrow \frac{2x (x+2)}{2x (x-2)} + h \frac{2x (x+2)}{2x (x-2)}$$

$$= \int \frac{x^2 (x+2) - [2x (x+2)] \cdot 0 + [2x (x+2)] \cdot 1}{x^2 (x+2) - [2x (x+2)] \cdot 0 + [2x (x+2)] \cdot 1} \rightarrow \int \frac{x^2 (x+2) - 2x (x+2)}{x^2 (x+2) - 2x (x+2)} + 10 \int \frac{-2x^2 - 9x^2}{-2x^2 - 9x^2}$$

$$= \int \frac{x^2 (x+2) - 2x (x+2)}{x^2 (x+2) - 2x (x+2)} + 10 \int \frac{-2x^2 - 9x^2}{-2x^2 - 9x^2}$$

$$\int f(x,u) = \int \frac{x^2 (x+2) - 2x (x+2)}{x^2 (x+2) - 2x (x+2)} + \int h \frac{-2x^2 - 9x^2}{-2x^2 - 9x^2}$$

$$= \left[ \frac{x^4}{4} + \frac{x^3}{3} + \frac{2x^2}{2} \right] - \left[ \frac{x^3}{3} - \frac{10x^4}{4} \right] + h \left[ \frac{-2x^4 - 9x^2}{2} \right] + C$$

$$= \left[ \frac{x^4}{4} + \frac{x^3}{3} + 3x^2 \right] - \left[ \frac{x^3}{3} - \frac{5x^4}{2} \right] + h \left[ \frac{-2x^4 - 9x^2}{2} \right] + C$$

$$\int f(x,u) = i \left[ \frac{(x+2)^6}{4} + \frac{u^3}{3} + 3u^2 \right] = \left[ \frac{(x+2)^6}{4} - 5 \frac{(x+2)^2}{2} \right] + h \left[ \frac{(x+2)^6 - 3(x+2)^2}{2} \right]$$

$$\int_0^1 f(x,u) = i \left[ \frac{1}{4} + \frac{1}{3} + 3 \right] - \left[ \frac{1}{3} - 5 \right] + h \left[ \frac{-1}{2} - 3 \right] + \frac{1}{2} + \frac{1}{2}$$

$$\int_0^1 f(x,u) = i \left[ \frac{43}{12} \right] - \left[ \frac{10}{3} \right] + 10 \left[ \frac{-7}{2} \right]$$

$$\int_0^1 f(x,u) = \frac{43}{12} - \frac{10}{3} + \frac{-70}{2} = -\frac{77}{2} h.$$

$$z = 5 = 10i + 3 + 3i$$

$$ax = 10, ay = 3 \text{ and } az = 0$$

$$|z| = \sqrt{10^2 + 3^2}$$

$$= \sqrt{100 + 9}$$

$$= \sqrt{109} = 10.44$$

the direction here is

$$\cos \alpha = \frac{ax}{|z|} = \frac{10}{10.44} = 0.96$$

$$\cos \beta = \frac{ay}{|z|} = \frac{3}{10.44} = 0.28$$

$$\cos \gamma = \frac{az}{|z|} = \frac{0}{10.44} = 0.00$$

ii) unit vector

$$\frac{z}{|z|} = \frac{10i + 3 + 3i}{10.44}$$

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$$m = p - bi$$

$$M = 4 + 3i$$

$$l = 1 - 2i$$

@ Mard  
M.

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$$\begin{aligned}
 m &= 6i - 6i - 3h \\
 M &= 4i + 3j - h \\
 0 &= i - 3j + 8h
 \end{aligned}$$

a) M dan N are perpendicular to each other  
 $M \cdot N = (6i - 6i - 3h) \cdot (4i + 3j - h)$   
 $= 4p - 5$   
 Since they are perpendicular  
 $4p - 5 = 0$   
 $4p = 5$   
 $p = \frac{5}{4}$

b) M dan O are perpendicular  
 $m \cdot (M \times O) =$

$$\begin{aligned}
 & \begin{vmatrix} p & +6 & -3 \\ 4 & 3 & -1 \\ 1 & 3 & 8 \end{vmatrix} \\
 &= p \begin{vmatrix} 3 & 1 & +6 \\ +3 & 2 & 1 \end{vmatrix} - 6 \begin{vmatrix} 4 & -1 \\ 1 & 8 \end{vmatrix} + 3 \begin{vmatrix} 4 & 3 \\ 1 & 3 \end{vmatrix} \\
 &= p(-8) + 6(8) - 3(12 - 3) \\
 &= 3p + 6(9) - 3(-5) = 0 \\
 &= 3p + 54 + 15 = 0 \\
 &= 3p + 69 = 0 \\
 &30 \mid 3 \quad \mid 3 \quad p = -23
 \end{aligned}$$