

کورس ترکیبی شماره  
 کورس دیگر نظر انداز

سوال

سبا

کا لغوی جیسے  
 کی شکلوں اختیار

4-6  
 6-8

$$\lim_{x \rightarrow 2} \frac{\sqrt{4-x^2} - \sqrt{x-2}}{\sqrt{x^3+x^2-6x}} = \frac{0}{0}$$

$\rightarrow \sqrt{x^3+x^2-6x} = \sqrt{x(x^2+x-6)} = \sqrt{x(x+3)(x-2)}$

$$= \lim_{x \rightarrow 2} \frac{\sqrt{4-x^2} - \sqrt{x-2}}{\sqrt{x} \sqrt{x+3} \sqrt{x-2}} \cdot \frac{\sqrt{4-x^2} + \sqrt{x-2}}{\sqrt{4-x^2} + \sqrt{x-2}}$$

$$= \lim_{x \rightarrow 2} \frac{4-x^2 - (x-2)}{\sqrt{x} \sqrt{x+3} \sqrt{x-2} [\sqrt{4-x^2} + \sqrt{x-2}]}$$

$4-x^2 - (x-2) = 4-x^2-x+2 = -(x^2+x-6)$

$$= \lim_{x \rightarrow 2} \frac{(x+3)(x-2)}{\sqrt{x} \sqrt{x+3} \sqrt{x-2} [\sqrt{x-2} \sqrt{-(2+x)} - \sqrt{x-2}]}$$

$$= \lim_{x \rightarrow 2} \frac{(x+3)(x-2)}{\sqrt{x} \sqrt{x+3} \sqrt{x-2} \sqrt{x-2} [\sqrt{-(2+x)} - 1]}$$

$$(x-y)(x+y) = x^2 - y^2$$

$$[\sqrt{4-x^2} - \sqrt{x-2}] \cdot [\sqrt{4-x^2} + \sqrt{x-2}] = (\sqrt{4-x^2})^2 - (\sqrt{x-2})^2 = 4-x^2 - (x-2)$$

$$x^2+x-6 = (x+3)(x-2)$$

$$\begin{aligned} \sqrt{4-x^2} &= \sqrt{(2-x)(2+x)} \\ &= \sqrt{-(x-2)(2+x)} \\ &= \sqrt{x-2} \sqrt{-(2+x)} \\ \sqrt{x-2} \sqrt{x-2} &= x-2 \end{aligned}$$

$$\lim_{x \rightarrow -2} \frac{x+3}{\sqrt{x} \sqrt{x+3} [\sqrt{-(2+x)} - 1]}$$

$$= \frac{2+3}{\sqrt{2} \sqrt{5} [\sqrt{-4} - 1]} = \frac{5}{\sqrt{10} [$$



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