

Math 231 Worksheet 2

Evaluate the limits.

1. $\lim_{x \rightarrow 1} (x + 3)(4x - 5) - x^3$

2. $\lim_{x \rightarrow 2} \frac{(x+1)^3}{2x+5}$

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

4. $\lim_{x \rightarrow -2} \frac{x^2+3x+2}{2x^2+4x}$

5. $\lim_{h \rightarrow 0} \frac{\frac{1}{1+h} - 1}{h}$

6. $\lim_{h \rightarrow 0} \frac{\sqrt{h+1} - 1}{h}$

7. $\lim_{x \rightarrow 0^-} \frac{|x|+x}{x}$

Answers:

1. -5

2. 3

3. $-\frac{1}{\sqrt{2}}$ (or $-\frac{\sqrt{2}}{2}$)

4. $\frac{1}{4}$

5. -1

6. $\frac{1}{2}$

7. 0