

# Lab Worksheet for November 4 , 2021

Practice Puncture law .

Compute the following limits.

1.  $\lim_{x \rightarrow 0} \frac{x^2}{x}$

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

3.  $\lim_{x \rightarrow 3} \frac{x^2(x-3)}{(x-3)}$

4.  $\lim_{x \rightarrow 2} \frac{e^x(x^2-4)}{(x^2-4)}$

$$5. \lim_{x \rightarrow 5} \frac{x^2 - x - 20}{2x^3 - 2x^2 - 40x}$$

$$6. \lim_{x \rightarrow 3} \frac{(x^2 - x - 6)}{(3x^2 + 6x)}$$

$$7. \lim_{x \rightarrow 0} \frac{(x^9 - 4x^3)}{x^3}$$

$$8. \lim_{x \rightarrow 0} \frac{\sin(x)\cos(x)}{\sin(x)}$$

$$9. \lim_{x \rightarrow \frac{\pi}{2}} \tan(x) \cos(x)$$

$$10. \lim_{x \rightarrow 0} \frac{\ln(x)}{3\ln(x)}$$

$$11. \lim_{x \rightarrow 0} \frac{(x^4 - 3x^2)}{x^2}$$

12.  $\lim_{x \rightarrow -2} 6x^3 - x^2 - 1$

13.  $\lim_{x \rightarrow 5} \frac{(x^4 - 3x^2)}{4x}$

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

15.  $\lim_{x \rightarrow 2} \ln(x^3 - 7)$

16.  $\lim_{x \rightarrow 0} e^x + 4x^2$

$$17. \lim_{x \rightarrow 1} 3(x + 4)^2$$

$$18. \lim_{x \rightarrow 0} \cos^2(x) + \sin(x) - 1$$

$$19. \lim_{x \rightarrow 5} x^2 + 4x + 4$$

$$20. \lim_{x \rightarrow 12} \sqrt{x + 4} - 8$$