Task card 1 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x \to 0} \frac{e^{2x} - 1 - 2x}{x^2}$$

Task card 2 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x \to 0} \frac{\sin 2x}{\sin 3x}$$

Task card 3 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x \to 1} \frac{x^2 - 5x + 4}{x^2 - 6x + 5}$$

Task card 4 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x \to 1} \frac{5 \ln x}{x^4 - 1}$$

Task card 5 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x \to \infty} \frac{x^2}{e^x}$$

Task card 6 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x \to 0} \frac{1 - \cos 4x}{x^2}$$

Task card 7 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x \to \infty} \frac{-5x - 1}{3x^2 + 5x + 8}$$

Task card 8 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x \to 0} \frac{e^{6x} - 1}{2x}$$

Task card 9 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x \to 0} \frac{e^{3x} - 1 - 3x}{x^2}$$

Task card 10 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x \to 0} \frac{\sin 6x}{\sin 3x}$$

Task card 11 L'Hôpital's Rule for Limits

Find the limit: $\lim_{x \to -2}$ of $\frac{x^3 + 3x^2 + 3x + 2}{x^2 - 3x - 10}$

Task card 12 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x \to 1} \frac{x^4 - 1}{\ln x}$$

Task card 13 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x\to\infty} \frac{x^3}{e^x}$$

Task card 14 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x\to\infty} \frac{6x^2 + 5x - 6}{2x^2 + 4x - 1}$$

Task card 15 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x\to 0} \frac{e^{3x} - 1}{2x}$$

Task card 16 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x\to 0} \frac{1 - \cos 2x}{x^2}$$

Task card 17 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x\to 0} \frac{\sin 4x}{e^{3x} - 1}$$

Task card 18 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x\to -3} \frac{x^2 - 2x - 15}{x^2 - x - 12}$$

Task card 19 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x \to 0} \frac{\cos 3x - 1}{x^2}$$

Task card 20 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x \to \infty} \frac{2x + 6}{4x^2 - 3x - 5}$$

Task card 21 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x \to 0} \frac{1 - \cos x}{x^2}$$

Task card 22 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x \to 0} \frac{\sin 2x}{\sin 7x}$$

Task card 23 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x \to 1} \frac{x^3 - 2x + 1}{2x^2 - 8x + 6}$$

Task card 24 L'Hôpital's Rule for Limits

Find the limit:

$$\lim_{x \to 1} \frac{2 \ln x}{x - 1}$$

L'Hôpital's Rule for Limits Task Cards

Recording sheet · Grade 12 · Each limit gives 0/0 or ∞/∞ when you substitute. Use L'Hôpital's Rule (differentiate the top and the bottom separately) and give the exact value: a whole number or a fraction in simplest form.

Scan to check your answers

Name: _____ Date: _____

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24

L'Hôpital's Rule for Limits Task Cards: Answer Key

Grade 12 · Hard

The answers online

1. 2	**2.** $\frac{2}{3}$	**3.** $\frac{3}{4}$
4. $\frac{5}{4}$	**5.** 0	**6.** 8
7. 0	**8.** 3	**9.** $\frac{9}{2}$
10. 2	**11.** $\frac{3}{-7}$	**12.** 4
13. 0	**14.** 3	**15.** $\frac{3}{2}$
16. 2	**17.** $\frac{4}{3}$	**18.** $\frac{8}{7}$
19. $\frac{9}{-2}$	**20.** 0	**21.** $\frac{1}{2}$
22. $\frac{2}{7}$	**23.** $\frac{1}{-4}$	**24.** 2