

شغف رفيقك خطوة بخطوة



شغف التعليمي
Educational passion

$$\begin{array}{l} 2 > -3 \\ 0.999... = 1 \\ \pi \approx 3.14 \\ \sqrt{2} \\ 5^2 \\ 101_2 = 5_{10} \\ (1-2) + 3 \\ 5^{(2+2)} \end{array}$$



القناة الرئيسية " فريق شغف التعليمي "



<https://t.me/alsh276>

مكتبة شغف " بوت الملفات "



https://t.me/passion_study_bot

ملاحظات:

$$\lim_{x \rightarrow 0} \ln(x) = -\infty$$

$$\lim_{x \rightarrow +\infty} \ln(x) = +\infty$$

$$\ln(+\infty) = +\infty$$

$$\ln(0) = -\infty$$

$$\ln(1) = 0$$

$$\ln(e) = +1$$

ملاحظات:

* إيجاد النهاية عند المجالات المفتوحة

والصور عند المجالات الفلقة

* عند ظهور عدم تعين نستخدم خواص تقليدية

للتخلص منها ونستخدم البرهات اللوغاريتمية فيها
لتحسب النهاية

* عند ظهور عدم تعين نلظر الى السوى ونشكل البرهنة
اللازمة

وضع مع الطلاب البتقنر قوانين ونهايات من عندها:

الأمن (٤٦)



التابع اللوغاريتمي

٤٦ النهايات اللوغاريتمية

$\lim_{x \rightarrow +\infty} \frac{\ln(x)}{x} = 0$ $\lim_{x \rightarrow +\infty} \frac{x}{\ln(x)} = +\infty$	المجموعة الأولى
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$\lim_{x \rightarrow 0} x \ln(x) = 0$	المجموعة الثانية
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$\lim_{x \rightarrow 0} \frac{\ln(x+1)}{x} = 1$ $\lim_{x \rightarrow 0} \frac{x}{\ln(x+1)} = 1$	المجموعة الثالثة
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$\lim_{x \rightarrow 1} \frac{\ln(x)}{x-1} = 1$ $\lim_{x \rightarrow 1} \frac{x-1}{\ln(x)} = 1$	المجموعة الرابعة
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$$7: \lim_{x \rightarrow +\infty} \frac{\ln(x)}{x} =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$8: \lim_{x \rightarrow +\infty} \frac{x - \ln(x)}{x} =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$9: \lim_{x \rightarrow 0} \frac{x - \ln(x)}{x} =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$10: \lim_{x \rightarrow +\infty} x - \ln(x) =$$

$+\infty$	$-\infty$	0	1
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$$11: \lim_{x \rightarrow 0} x - \ln(x) =$$

$+\infty$	$-\infty$	0	1
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$$12: \lim_{x \rightarrow -\infty} x + x \ln\left(1 + \frac{1}{x}\right) =$$

$+\infty$	$-\infty$	0	1
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$$13: \lim_{x \rightarrow +\infty} x + x \ln\left(1 + \frac{1}{x}\right) =$$

$+\infty$	$-\infty$	0	1
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تمارين:

حل النهايات التالية:

$$1: \lim_{x \rightarrow 0} \frac{1}{x} + \ln(x) =$$

$+\infty$	$-\infty$	0	1
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$$2: \lim_{x \rightarrow 0} x \ln\left(1 + \frac{1}{x}\right) =$$

$+\infty$	$-\infty$	0	1
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$$3: \lim_{x \rightarrow +\infty} x \ln\left(1 + \frac{1}{x}\right) =$$

$+\infty$	$-\infty$	0	1
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$$4: \lim_{x \rightarrow +\infty} [\ln(2x + 1) - \ln(x + 2)] =$$

$+\infty$	$-\infty$	$\ln(2)$	$\ln(3)$
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$$5: \lim_{x \rightarrow +\infty} \frac{\ln(x)}{x^2} =$$

$+\infty$	$-\infty$	0	1
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$$6: \lim_{x \rightarrow +\infty} \frac{\sqrt{x}}{\ln(x)} =$$

$+\infty$	$-\infty$	0	1
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$$20: \lim_{x \rightarrow 0} \frac{1}{\ln(x)} : Df =]0, +\infty[/ \{1\}$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$21: \lim_{x \rightarrow 1^-} \frac{1}{\ln(x)} : Df =]0, +\infty[/ \{1\}$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$22: \lim_{x \rightarrow 1^+} \frac{1}{\ln(x)} : Df =]0, +\infty[/ \{1\}$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$23: \lim_{x \rightarrow 0} x(1 - \ln(x)) : Df =]0, +\infty[$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$24: \lim_{x \rightarrow +\infty} x(1 - \ln(x)) : Df =]0, +\infty[$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$25: \lim_{x \rightarrow +\infty} \ln\left(\frac{x+1}{x-4}\right) : Df; x < -1; x > 4$$

$+\infty$	$-\infty$	0	1
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$$26: \lim_{x \rightarrow -\infty} \ln\left(\frac{x+1}{x-4}\right) : Df; x < -1; x > 4$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$27: \lim_{x \rightarrow -1^-} \ln\left(\frac{x+1}{x-4}\right) : Df; x < -1; x > 4$$

$+\infty$	$-\infty$	0	1
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$$14: \lim_{x \rightarrow -1^-} x + x \ln\left(1 + \frac{1}{x}\right) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$15: \lim_{x \rightarrow 0^+} x + x \ln\left(1 + \frac{1}{x}\right) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$16: \lim_{x \rightarrow 0^+} \frac{1}{x} - \ln(x) : Df =]0, +\infty[$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$17: \lim_{x \rightarrow +\infty} \frac{1}{x} - \ln(x) : Df =]0, +\infty[$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$18: \lim_{x \rightarrow +\infty} \frac{x \ln(x)}{x+1} : Df =]0, +\infty[$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$19: \lim_{x \rightarrow 0^+} \frac{x \ln(x)}{x+1} : Df =]0, +\infty[$$

$+\infty$	$-\infty$	0	1
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$$19: \lim_{x \rightarrow +\infty} \frac{1}{\ln(x)} : Df =]0, +\infty[/ \{1\}$$

$+\infty$	$-\infty$	0	1
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الطلاب

بعد

ماشافو

34

نهاية

ولسا

مكاملين



$$28: \lim_{x \rightarrow 4^+} \ln \left(\frac{x+1}{x-4} \right) : Df; x < -1; x > 4$$

$+\infty$	$-\infty$	0	1
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$$29: \lim_{x \rightarrow +\infty} \frac{1}{x} (\ln(x) - 1) : Df =]0, +\infty[$$

$+\infty$	$-\infty$	0	1
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$$30: \lim_{x \rightarrow 0} \frac{1}{x} (\ln(x) - 1) : Df =]0, +\infty[$$

$+\infty$	$-\infty$	0	1
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$$31: \lim_{x \rightarrow 0} x + \ln(x+1) - \ln(x) : Df =]0, +\infty[$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$32: \lim_{x \rightarrow +\infty} x + \ln(x+1) - \ln(x) : Df =]0, +\infty[$$

$+\infty$	$-\infty$	0	1
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$$33: \lim_{x \rightarrow +\infty} x + 1 - \frac{\ln(x)}{x} =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$34: \lim_{x \rightarrow 0} x + 1 - \frac{\ln(x)}{x} =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$43: \lim_{x \rightarrow +\infty} \frac{1 - \ln(x)}{x} =$$

$+\infty$	$-\infty$	0	1
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$$44: \lim_{x \rightarrow +\infty} x^2 - 8x + 8 + 6\ln(x) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$45: \lim_{x \rightarrow 0^+} x^2 - 8x + 8 + 6\ln(x) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$46: \lim_{x \rightarrow -1^+} \ln\left(\frac{x+1}{1-x}\right) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$47: \lim_{x \rightarrow 1^-} \ln\left(\frac{x+1}{1-x}\right) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$48: \lim_{x \rightarrow 1^+} \frac{1}{x \ln(x)} =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$49: \lim_{x \rightarrow +\infty} \frac{1}{x \ln(x)} =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$35: \lim_{x \rightarrow 0^+} \frac{1}{x} - \ln\left(1 + \frac{1}{x}\right) =$$

$+\infty$	$-\infty$	0	1
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$$36: \lim_{x \rightarrow +\infty} \frac{1}{x} - \ln\left(1 + \frac{1}{x}\right) =$$

$+\infty$	$-\infty$	0	1
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$$37: \lim_{x \rightarrow +\infty} x^2 - 3\ln(3) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$38: \lim_{x \rightarrow +\infty} \ln\left(\frac{x+1}{x}\right) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$39: \lim_{x \rightarrow +\infty} 1 - x \ln\left(1 + \frac{1}{x}\right) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$40: \lim_{x \rightarrow +\infty} x \ln(x) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$41: \lim_{x \rightarrow 0^+} x \ln(x) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$42: \lim_{x \rightarrow 0^+} \frac{1 - \ln(x)}{x} =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$58: \lim_{x \rightarrow 0^+} x - 4 + \ln\left(\frac{x}{x+1}\right) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$59: \lim_{x \rightarrow +\infty} x - 4 + \ln\left(\frac{x}{x+1}\right) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$60: \lim_{x \rightarrow 0^+} x - \ln\left(2 + \frac{1}{x}\right) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$61: \lim_{x \rightarrow +\infty} x - \ln\left(2 + \frac{1}{x}\right) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$62: \lim_{x \rightarrow +\infty} 5 - 2x + 3\ln\left(\frac{x+1}{x-4}\right) =$$

$+\infty$	$-\infty$	0	1
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$$63: \lim_{x \rightarrow 4^+} 5 - 2x + 3\ln\left(\frac{x+1}{x-4}\right) =$$

$+\infty$	$-\infty$	0	1
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$$64: \lim_{x \rightarrow 1^+} x + \ln(x^2 - 1) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$50: \lim_{x \rightarrow +\infty} \ln(1 + x^2) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$51: \lim_{x \rightarrow -\infty} \ln(1 + x^2) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$52: \lim_{x \rightarrow +\infty} \ln\left(\frac{x}{x+1}\right) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$53: \lim_{x \rightarrow 0^+} \ln\left(\frac{x}{x+1}\right) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$54: \lim_{x \rightarrow -1^+} \ln(x+1) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$55: \lim_{x \rightarrow +\infty} \ln(x+1) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$56: \lim_{x \rightarrow +\infty} x + 1 + 2\ln\left(\frac{x}{x-1}\right) =$$

$+\infty$	$-\infty$	0	1
-----------	-----------	---	---

$$57: \lim_{x \rightarrow 1^+} x + 1 + 2\ln\left(\frac{x}{x-1}\right) =$$

$+\infty$	$-\infty$	0	1
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$$\begin{array}{l} 2 > -3 \\ 0.999... = 1 \\ \pi \approx 3.14 \\ \sqrt{2} \\ 5^2 \\ 101_2 = 5_{10} \\ (1-2) + 3 \\ 5^{(2+2)} \end{array}$$



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