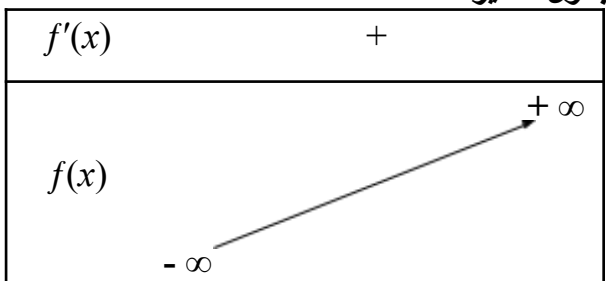
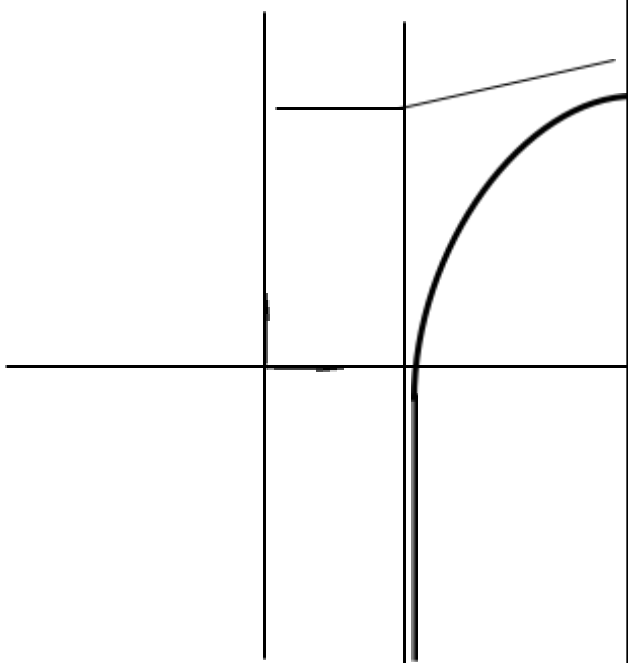


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|               |                                                                                      |                                                             |
|---------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------|
|               | <u>التمرين الرابع (05 نقاط):</u>                                                     | <u>التمرين الأول (05 نقاط):</u>                             |
|               | $f(x) = x + 1 + \ln(x - 2) - \ln(x)$                                                 | 1,85                                                        |
| $\frac{1}{2}$ | $f(x) = x + 1 + \ln\left(\frac{x-2}{x}\right)$                                       | 1,85                                                        |
| $\frac{1}{2}$ | $\lim_{x \rightarrow 2} f(x) = -\infty, \lim_{x \rightarrow +\infty} f(x) = +\infty$ | 1,85                                                        |
| 1             | دراسة الوضع النسبي                                                                   | 1,85                                                        |
|               | مستحيل - $f(x) - y = 0$                                                              |                                                             |
| $\frac{1}{2}$ | $f(x) - y > 0$                                                                       | 1                                                           |
| $\frac{1}{2}$ | $f'(x) = 1 + \frac{2}{x(x-2)}$                                                       | 1                                                           |
| $\frac{1}{2}$ | $f'(x) > 0$                                                                          | $\alpha \leftarrow 1 = \frac{13}{60}$ (1)                   |
| $\frac{1}{2}$ | جدول التغيرات                                                                        | $= (E(x) - 1) \sum_{i=1}^{i=4} x_i p_i = \frac{98}{60}$ (2) |
|               |    | $V(x) = \sum_{i=1}^{i=4} x_i p_i - (E(x))^2 = 3,35$         |
| $\frac{1}{2}$ | المعادلة $f(x) = 0$ تقبل حل وحيد $\alpha$                                            | $V(x) = \sqrt{V(x)} = 1,83$                                 |
|               | $\alpha < 2,06 > 2,10$                                                               | $p(x < 2) = \frac{1}{3}$                                    |
|               | $f$ مستمرة على المجال $[2,10, 2,06]$ ورتيبة تماما                                    | $p(x \geq 3) = \frac{1}{5} + \frac{13}{60}$                 |
|               | $f(2,06) \times f(2,10) < 0$                                                         | $p(x^2 - 6x - 8 < 0) = \frac{1}{5}$                         |
| $\frac{1}{2}$ |   | <u>التمرين الثالث (05 نقاط):</u>                            |
|               |                                                                                      | $U_0 = 2$                                                   |
|               |                                                                                      | $U_{n+1} = 2 U_n + 1$                                       |
|               |                                                                                      | 1 $U_1 = 5, U_2 = 11$                                       |
|               |                                                                                      | $\frac{1}{2} V_{n+1} = 2 V_n$                               |
|               |                                                                                      | $\frac{1}{2} V_0 = 3$                                       |
|               |                                                                                      | $\frac{1}{2} V_n = 3 \cdot 2^n$                             |
|               |                                                                                      | $S = V_0 + \dots + V_n$                                     |
|               |                                                                                      | 1 $= 3 (2^{n+1} - 1)$                                       |
|               |                                                                                      | 1 $S' = 3(2^{n+1} - 1) - (n + 1)$                           |

