

1b) i)  $S_3 = 7$

ii)  $S_7 = 7^2 - 2 = 47$

iii)  $S_{11} = 11^2 - 2 = 121 - 2 = 119$

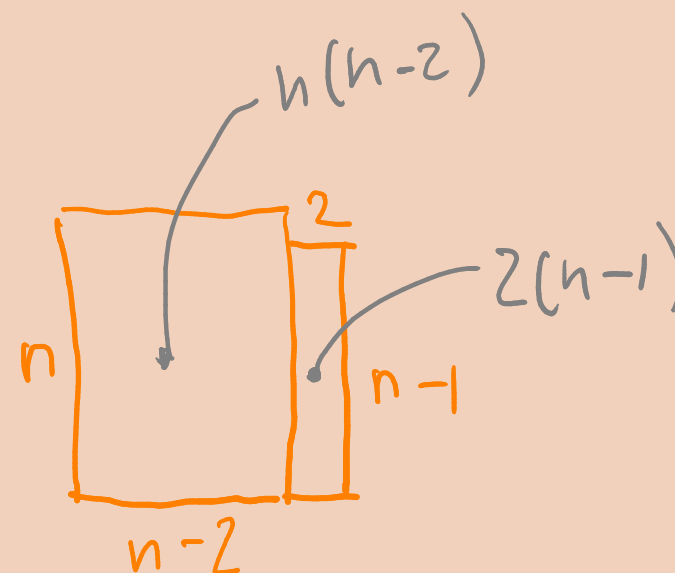
iv)  $S_n = n^2 - 2$

c)  $n$  é a ordem,  $S_n$  é o número de ladrilhos:

$$S_n = n^2 - 2$$

d)  $S_n = n(n-2) + 2(n-1)$

OBS: Tem vários jeitos de fazer a c) e a d)



$$2) \quad a) \quad S = 1 + 2 + \dots + 49 + 50$$

$$S = 50 + 49 + \dots + 2 + 1$$

$$2S = \underbrace{51 + 51 + \dots + 51 + 51}_{50 \text{ vejes}}$$

$$2S = 51 \cdot 50$$

$$S = \frac{51 \cdot 50}{2}$$

$$S = 51 \cdot 25$$

$$S = 1275$$

$$\begin{array}{r} 51 \\ \times 25 \\ \hline 255 \\ 1020 \\ \hline 1275 \end{array}$$

$$b) \quad S = 2 + 4 + 6 + \dots + 58 + 60$$

$$S = 60 + 58 + 56 + \dots + 4 + 2$$

$$2S = \underbrace{62 + 62 + 62 + \dots + 62 + 62}_{30 \text{ vejes}}$$

$$2S = 62 \cdot 30$$

$$S = \frac{62 \cdot 30}{2}$$

$$S = 62 \cdot 15$$

$$S = 930$$

$$\begin{array}{r} 62 \\ \times 15 \\ \hline 310 \\ 620 \\ \hline 930 \end{array}$$

c) 5° impar:  $2 \cdot 5 - 1 = 9$

19° impar:  $2 \cdot 19 - 1 = 38 - 1 = 37$

Do 5° ao 19° impar existem 15 ímpares

$$S = 9 + 11 + 13 + \dots + 35 + 37$$

$$S = 37 + 35 + 33 + \dots + 11 + 9$$

$$2S = \underbrace{46 + 46 + 46 + \dots + 46 + 46}_{15 \text{ vezes}}$$

$$2S = 46 \cdot 15$$

$$S = \frac{46 \cdot 15}{2} = 23 \cdot 15$$

$$S = 345$$

$$\begin{array}{r} 23 \\ \times 15 \\ \hline 115 \\ + 230 \\ \hline 345 \end{array}$$

ímpares	
1°	1
2°	3
3°	5
4°	7
5°	9
⋮	⋮
n°	2n - 1

d) Entre (e inclusive) o 5 e o 21 existem 17 números.

$$S = 5 + 6 + \dots + 21$$

$$S = 21 + 20 + \dots + 5$$

$$2S = \underbrace{26 + 26 + \dots + 26}_{17 \text{ vezes}}$$

$$S = \frac{26 \cdot 17}{2}$$

$$S = 13 \cdot 17$$

$$S = 221$$

$$\begin{array}{r} 2 \\ 13 \\ 17 \\ \hline 91 \\ 130 \\ \hline 221 \end{array}$$

$$3) \quad a) \quad x + \frac{1}{2} = -\frac{3}{5}$$

$$x = -\frac{3}{5} - \frac{1}{2}$$

$$x = -\frac{6}{10} - \frac{5}{10}$$

$$x = -\frac{11}{10}$$

$$b) \quad \frac{1}{5}k + 3 = \frac{1}{10}$$

$$\frac{1}{5}k = \frac{1}{10} - 3$$

$$\frac{1}{5}k = \frac{1}{10} - \frac{30}{10}$$

$$\frac{1}{5}k = -\frac{29}{10}$$

$$k = \frac{-29}{10} \div \frac{1}{5}$$

$$k = -\frac{29}{10} \cdot \frac{5}{1}$$

$$k = \frac{-29}{1} \cdot \frac{5}{10}$$

$$k = \frac{-29}{1} \cdot \frac{1}{2}$$

$$k = -\frac{29}{2}$$

$$c) \frac{1}{5}(k+3) = \frac{3}{15}$$

$$\frac{1}{5}k + \frac{1}{5} \cdot 3 = \frac{3}{15}$$

$$\frac{1}{5}k + \frac{3}{5} = \frac{1}{5}$$

$$\frac{1}{5}k = \frac{1}{5} - \frac{3}{5}$$

$$\frac{1}{5}k = -\frac{2}{5}$$

$$k = -\frac{2}{5} \div \frac{1}{5}$$

$$k = -\frac{2}{5} \cdot \frac{5}{1}$$

$$k = -2$$

$$d) \frac{2}{7}(y - \frac{7}{5}) + 3 = \frac{3}{7}(y - 2)$$

$$\frac{2}{7}y - \frac{2}{\cancel{7}} \cdot \frac{\cancel{7}}{5} + 3 = \frac{3}{7}y - \frac{3}{7} \cdot 2$$

$$\frac{2}{7}y - \frac{2}{5} + \frac{15}{5} = \frac{3}{7}y - \frac{6}{7}$$

$$\frac{2}{7}y + \frac{13}{5} = \frac{3}{7}y - \frac{6}{7}$$

$$\frac{2}{7}y - \frac{3}{7}y = -\frac{6}{7} + \frac{13}{5}$$

$$-\frac{1}{7}y = -\frac{30}{35} + \frac{71}{35}$$

$$-\frac{1}{7}y = \frac{51}{35}$$

$$y = \frac{51}{35} \div (-\frac{1}{7})$$

$$y = -\frac{51}{35} \cdot 7$$

$$y = -\frac{51}{5}$$

$$\begin{array}{r} 2 \\ 13 \\ \times 7 \\ \hline 91 \end{array}$$

$$e) x(x+5) - x^2 = \frac{1}{3}$$

$$\cancel{x^2} + x \cdot 5 - \cancel{x^2} = \frac{1}{3}$$

$$5x = -\frac{1}{3}$$

$$x = -\frac{1}{3} \div 5$$

$$x = -\frac{1}{3} \cdot \frac{1}{5}$$

$$x = -\frac{1}{15}$$

$$f) 3(z+2) = \frac{1}{5}\left(3 + \frac{2}{5}\right) + z$$

$$3z + 6 = \frac{3}{5} + \frac{2}{25} + z$$

$$3z - z = \frac{3}{5} + \frac{2}{25} - 6$$

$$2z = \frac{15}{25} + \frac{2}{25} - \frac{150}{25}$$

$$2z = -\frac{133}{25}$$

$$z = -\frac{133}{25} \div 2$$

$$z = -\frac{133}{25} \cdot \frac{1}{2}$$

$$z = -\frac{133}{50}$$

$$\begin{array}{r} 3 \\ 25 \\ \times 6 \\ \hline 150 \end{array}$$

$$\begin{array}{r} 410 \\ 150 \\ - 17 \\ \hline 133 \end{array}$$