

## Tarea 4

Para entregar el viernes, 6 marzo, 2026

Evalua las siguientes expresiones. Dar la respuesta como fracción reducida. No usar fracciones decimales.

### Ejemplos.

■  $\frac{xy}{x-y}$ , donde  $x = \frac{3}{4}$ ,  $y = \frac{7}{6}$ .

$$\triangleright \frac{xy}{x-y} = \frac{\frac{3}{4} \cdot \frac{7}{6}}{\frac{3}{4} - \frac{7}{6}} = \frac{\frac{3 \cdot 7}{4 \cdot 6}}{\frac{3 \cdot 3}{4 \cdot 3} - \frac{7 \cdot 2}{6 \cdot 2}} = \frac{\frac{21}{24}}{\frac{9}{12} - \frac{14}{12}} = \frac{\frac{21}{24}}{\frac{9-14}{12}} = \frac{\frac{21}{24}}{\frac{-5}{12}} = -\frac{\frac{21}{24}}{\frac{5}{12}} = -\frac{21}{24} \cdot \frac{12}{5} = \frac{21}{10}.$$

■  $\frac{1-x^2}{(1-x)^2}$ , donde  $x = -\frac{3}{4}$ .

$$\triangleright \frac{1-x^2}{(1-x)^2} = \frac{1 - \left(-\frac{3}{4}\right)^2}{\left(1 - \left(-\frac{3}{4}\right)\right)^2} = \frac{1 - \frac{9}{16}}{\left(1 + \frac{3}{4}\right)^2} = \frac{\frac{16-9}{16}}{\left(\frac{4}{4} + \frac{3}{4}\right)^2} = \frac{\frac{16-9}{16}}{\left(\frac{4+3}{4}\right)^2} = \frac{\frac{7}{16}}{\left(\frac{7}{4}\right)^2} = \frac{\frac{7}{16}}{\frac{49}{16}} = \frac{7}{16} \cdot \frac{16}{49} = \frac{1}{7}.$$

1. (a)  $x + y$ , (b)  $\frac{x}{y}$ , (c)  $1 - x$ , donde  $x = -\frac{4}{6}$ ,  $y = \frac{5}{10}$ .
2. (a)  $\frac{1}{x}$ , (b)  $x - \frac{2}{3}$ , (c)  $(x-1)^2$ , donde  $x = \frac{7}{3}$ .
3. (a)  $xy$ , (b)  $\frac{x+y}{2}$ , (c)  $\frac{x}{x+y}$ , donde  $x = \frac{6}{8}$ ,  $y = -\frac{9}{6}$ .
4. (a)  $\frac{x-y}{x}$ , (b)  $\frac{1}{x-y}$ , (c)  $(2x)(3y)$ , donde  $x = -\frac{5}{4}$ ,  $y = \frac{2}{3}$ .
5. (a)  $x + y + z$ , (b)  $xyz$ , (c)  $\frac{xz}{y}$ , donde  $x = -\frac{10}{15}$ ,  $y = \frac{4}{5}$ ,  $z = -\frac{3}{2}$ .
6. (a)  $\frac{x}{x-y}$ , (b)  $\frac{1}{x} - \frac{1}{y}$ , (c)  $(x-2)(y+1)$ , donde  $x = \frac{8}{3}$ ,  $y = -\frac{3}{4}$ .
7. (a)  $\frac{x^2}{y}$ , (b)  $\frac{y^2}{x}$ , (c)  $x^2 - y^2$ , donde  $x = -\frac{5}{6}$ ,  $y = -\frac{7}{9}$ .
8. (a)  $x(y-z)$ , (b)  $\frac{x}{y+z}$ , (c)  $\frac{1}{x} + \frac{1}{y} + \frac{1}{z}$ , donde  $x = \frac{3}{2}$ ,  $y = -\frac{5}{4}$ ,  $z = \frac{2}{3}$ .
9. (a)  $xy$ , (b)  $x + y$ , (c)  $(x-y)^2$ , donde  $x = \frac{7}{5}$ ,  $y = -\frac{10}{7}$ .
10. (a)  $\frac{xy}{z}$ , (b)  $\frac{x}{y-z}$ , (c)  $(x-1)(y-1)(z-1)$ , donde  $x = -\frac{4}{3}$ ,  $y = \frac{5}{2}$ ,  $z = -\frac{6}{5}$ .