

Solve and list the restrictions

$$\frac{8}{y^2 + 6y + 8} = \frac{1}{y + 2} - \frac{3}{y + 4}$$

# Solve and list the restrictions

$$\frac{\cancel{(y+4)}\cancel{(y+2)} \cdot 8}{\cancel{(y+4)}\cancel{(y+2)} \cdot (y^2 + 6y + 8)} = \frac{\cancel{(y+4)}\cancel{(y+2)} \cdot 1}{\cancel{y+2}} - \frac{3 \cdot \cancel{(y+4)}\cancel{(y+2)}}{\cancel{y+4}}$$

$$\frac{4 \times 8}{6 \times 2}$$

$$8 = 1(y+4) - 3(y+2)$$

$$8 = \underline{y+4} - \underline{3y-6}$$

$$8 = -2y - 2$$

$$\frac{10}{-2} = \frac{-2y}{-2}$$

$$\boxed{-5 = y}$$

Restrictions

$$y+4=0 \quad \& \quad y+2=0$$

-4 -4                      -2 -2

$$y = -4 \quad \& \quad y = -2$$