1 *Solve*

$$10x - 5y = 25$$

for y. Show at least one intermediate step.

First I subtract $10x$ from both sides, then I divide both sides by -5:

$$\begin{aligned} 10 - 5y &= 25; \\ -5y &= -10x + 25; \\ y &= 2x - 5. \end{aligned}$$

2 *If an amount of money P is invested at an interest rate r for a period of time t, then the interest is*

$$I = Prt.$$

a Solve this equation for r.

I simply divide both sides by Pt:

$$\begin{aligned} I &= Prt; \\ \frac{I}{Pt} &= r; \\ r &= \frac{I}{Pt}. \end{aligned}$$

b If \$5000 is invested for 1.5 years and receives \$225 interest, what was the interest rate? Show what numerical calculation you make or what equation you solve.

Since $P = \$5000$, $t = 1.5\,\mathrm{y}$, and $I = \$225$,

$$r = \frac{I}{Pt} = \frac{\$225}{\$5000 \cdot 1.5\,\mathrm{y}} = 0.03/\mathrm{y}.$$

That is, the interest rate is $3\,\%$ per year.