You start a painting business by purchasing all the needed equipment for $15,750. Each job costs you $80 in paint and brushes. You plan to charge $600 per job.

How many jobs will it take for you to break-even?

j = # painting job

Break-Even Point: Income = Expenses

Income Equation: $600j$

Expenses Equation: $15{,}750 + 80j$

$600j = 15{,}750 + 80j$

$-80j \quad -80j$

$520j = 15{,}750$

Break-Even Point = $j = 30.28$

$\rightarrow$ 31 jobs

While in college you plan on making money by typing papers for other students. To do this you need to buy a computer and a printer for $1235. It costs you $0.70 to type and print each page. You plan on charging $1.50 per page.

p = # pages

Write and solve a system of equations to find the number of pages you must type in order to break-even.

Income: $1.50p$ = Expense: $1235 + 0.70p$

$-.70p \quad -0.70p$

$\frac{0.80p}{0.80} = \frac{1235}{0.80}$

$p = 1544$ pages

You want to start a business selling sporting goods. In order to do so you will buy a building for $400,000. Insurance and taxes cost you $2825 a month. Wages for your workers average $3500 a month. Utilities for your building average $840 a month. You predict that you can sell an average of $20,000 worth of merchandise each month.

m = # months

How many months will it take you to break-even?

Income: $20{,}000m$ = expense: $400{,}000 + 2825m + 3500m + 840m$

$m = 32$ months