Algebra 1 ECA Remediation
Homework 20.1

Name Answer Key

1. Several students decide to start a T-shirt company. After initial expenses of $280, they purchase each T-shirt wholesale for $3.99. They sell each T-shirt for $10.99. How many T-shirts must they sell to break even?

Cost $280 on time
$3,99 per t-shirt
Income $10.99 per t-shirt

Cost = $3.99x + 280$
Income = $10.99x$

$10.99x = 3.99x + 280$
$-3.99x \quad -3.99x$

$\frac{7x}{7} = \frac{280}{7}$

$x = 40$

40 t-shirts need to be sold to break even.

2. Suppose you are starting an office-cleaning service. You have spent $315 on equipment. To clean an office, you use $4 worth of supplies. You charge $25 per office. How many offices must you clean to break even?

Cost $315 on time
$4 per cleaning
Income $25 per cleaning

Cost = $4x + 315$
Income = $25x$

$25x = 4x + 315$
$-4x \quad -4x$

$\frac{21x}{21} = \frac{315}{21}$

$x = 15$

15 offices need to be cleaned to break even.

3. Suppose you invest $1500 in equipment to put pictures on T-shirts. You buy each T-shirt for $3. After you have placed the picture on a shirt, you sell it for $20. How many T-shirts must you sell to break even?

Cost $1500 one time
$3 per t-shirt
Income $20 per t-shirt

Cost = $3x + 1500$
Income = $20x$

$20x = 3x + 1500$
$-3x \quad -3x$

$\frac{17x}{17} = \frac{1500}{17}$

$x = 88.235$

89 t shirts need to be sold to break even