

CHAPTER
4 **Project Recording Sheet**
Number Theory and Fractions

Plumber’s Cost/Profit Analysis

Plumbers and other trades people figure the cost to the consumer by examining the costs of materials and the amount that they should receive for their time, labor, and overhead. Plumbers use a formula to determine the price of a job.

$$\text{Cost to consumer} = \left(\frac{\text{cost of pipe}}{3} \right) \times 49 + \frac{\text{cost of pipe fittings}}{2}$$

The numbers in the formula may change depending upon the plumber’s costs.

Use the formula and the prices given for materials in the table below to calculate the costs of four different jobs.

Installed Drain Lines

Job	Feet of Pipe	Fittings	Cost of Installed Line (\$)
1	30	2 $\frac{1}{4}$ -bends, 1 $\frac{1}{6}$ -bend	
2	26	2 $\frac{1}{4}$ -bends	
3	75	3 $\frac{1}{8}$ -bends	
4	150	3 $\frac{1}{6}$ -bends, 1 $\frac{1}{8}$ -bend	

ABS Plastic Drain Pipe Prices

Component	Cost (\$)
Pipe 4 in. x 10 ft	11.99
Pipe 4 in. x 20 ft	22.57
Straight coupling	2.19
$\frac{1}{4}$ -bend connection	6.49
$\frac{1}{8}$ -bend connection	5.99
$\frac{1}{6}$ -bend connection	7.49

What happens to the cost if the numbers in the formula change? Make the following changes in the formula and calculate the new cost for Job 1 from the table: The cost of the pipe doubles; the cost of the fittings doubles; the number 49 that represents time, labor, and overhead is changed to 60. _____

Which change affects the cost the most? Why?

Extension: Draw a possible drain line from a house to a sewer system. Calculate the cost of the line. Exchange drawings with a classmate and calculate costs for each other’s drawings. Compare the results. Are they the same? If not, why? Can you see how two plumbers could arrive at different prices? Explain?
