

Section 5-1

Looking for Employment

Advanced Financial Algebra

“Choose a job you love, and you will never have to work a day in your life.”

▶ by Confucius, an ancient Chinese philosopher

- ▶ Since about 35% of the time you are awake during your lifetime is spent at work, it is important to understand as much as possible about salaries, benefits, taxes, etc.
- ▶ You will be able to apply this knowledge while you are searching, applying, and working at a job usually from your mid-20s until your 60s or 70s.



Example 1 - finding a job on an Internet website

- ▶ Julianne found a job on the internet which pays a yearly salary of \$41,000 (\$41K). What is the weekly salary based on the annual salary?
- ▶ SOLUTION:
 - ▶ The K stands for \$1,000 and there are 52 weeks in a year.
 - ▶ $41,000 / 52 \text{ weeks} = \underline{\$788.46 \text{ weekly salary}}$ rounded to the nearest cent.

Example 2 - finding a job through an employment agency

- ▶ Dylan took an applicant-paid job through an employment agency that charges a fee of 20% of his first four weeks pay. If the job pays \$395 per week, how much he pay the agency?
- ▶ SOLUTION:
 - ▶ $\$395 * 4 \text{ weeks} = \$1,580$ is his first 4 weeks pay
 - ▶ $\$1,580 * .20$ (which is 20% as a decimal) = **\$316.00 fee** to agency



Example 3 - piecewise function listing

- ▶ Ken is a mechanic who owns Ace Auto Repair. He needs to hire a good mechanic so he is putting a 12-line ad online. The cost of an ad x lines long is given by the following piecewise function:

- ▶
$$C(x) = \begin{cases} 56 & h \leq 4 \\ 56 + 6(h - 4) & h > 4 \end{cases}$$

- ▶ Find the cost of a 12-line ad.



- ▶ SOLUTION:

- ▶ Since $12 > 4$, we must use the second line of the piecewise function ONLY.
- ▶ $C(12) = 56 + 6(12 - 4) = \underline{\$104}$

Example 4 - employer posting a listing

▶ A job-search website charges employers to post listings and the price list at the right. What is the percent savings for posting in bulk if an employer decides to post four jobs instead of just one?

▶ SOLUTION:

▶ The price for one job is \$395.

▶ If four jobs are posted, the price per job is \$350 which is a \$45 discount = 395-350

▶ Percent discount = $\frac{\quad - \quad}{\quad}$

$$= \frac{395 - 350}{350} \approx 0.113 \approx \underline{\underline{11\% \text{ savings for the employer}}}$$

Number of Job Postings	Price per Job Posting
1	\$395.00 each
2	\$385.00 each
3	\$375.00 each
4	\$350.00 each
5-20	\$320.00 each
21-50	\$265.00 each
51-100	\$200.00 each
101-150	\$165.00 each
151-250	\$135.00 each

Example 5 - printing business cards

- ▶ Jane's Printing charges \$49.95 to print 200 business cards and each additional set of 100 cards costs \$14. Express this situation in a piecewise function and call it $r(x)$.

- ▶ SOLUTION:

- ▶ Think of the printing in sets of 100 cards. 200 cards is 2 sets of 100 and 100 cards is one set.
- ▶ Split into two options. Only buying 200 cards or less vs. buying more than 200 cards.

- ▶ $R(x) =$

$$\begin{cases} \$ \cdot & \left(\begin{array}{l} \# \\ \# \end{array} \right) \leq \\ \$ \cdot + (-) & \left(\begin{array}{l} \# \\ \# \end{array} \right) \geq \end{cases}$$

“In today’s competitive job market, it is important to realize that finding a job is in itself a full-time job.

▶ Assignment: Pg 296 #1-8, 10, 12

▶ 1. Interpret the quote above.

▶ 2. Danny just submitted his resume in response to a job posting. The posting stated that the job pays \$47K annually. What would Danny's monthly salary be if he gets this job? Round to the nearest cent.

▶ 3. Becky just got a new job as an account executive. Human resources said the job pays 64.5K. What will Becky's weekly salary be to the nearest cent?

▶ 4. Melanie got a new employer-paid job through the Jones Recruitment Agency. The job pays \$52,400 per year, and the agency fee is equal to 25% of one month's pay. How much must Melanie's employer pay the agency?

▶ 5. The Rockville Recruitment Agency just placed Howard Jacobson in a job as an assistant pharmacist. The job pays \$51.2K. The agency fee is equal to 40% of the first three weeks' pay.

a. What is Howard's weekly salary to the nearest cent?

b. What will Howard earn during the first three weeks?

c. How much must Howard pay the employment agency to the nearest dollar?

Assignment: Pg 296 #1-8, 10, 12 continued

Maple Place Garage is posting five job listings with the online service from Example 4 in the Skills and Strategies section.

▶ 6.

a. How much is each posting?

b. How much less does Maple Place pay per posting compared to the price for one posting?

c. What is the cost of the five postings?

d. What is the total savings for the five postings?

e. Express the total savings as a percent of the total cost for the five postings. Round to the nearest percent.

▶ 7. Roger is a graphic artist and he needs to print 400 copies of his resume. His print shop charges \$91.50 for the first 200 copies and \$425 for each 100 additional copies.

▶ a. How much will the 400 copies cost, including a sales tax of 6%?

▶ b. If the number of sets of 100 resumes is x , express the cost $r(x)$ as a piecewise function.

Assignment: Pg 296 #1-8, 10, 12 continued

▶ 8. Pat earns \$575 per week at her new job. Express her annual salary using the K abbreviation found in classified ads.

▶ 10. Mike is a veterinarian. He is placing a 9-line job ad for an assistant. The following piecewise function gives the price of an x -line ad.

$$a(x) = \begin{cases} 45 & \text{when } x \leq 3 \\ 45 + 9(x - 3) & \text{when } x > 3 \end{cases}$$

a. Find the difference between the cost of a 2-line ad and the cost of a 3-line ad.

b. Find the cost of a 10-line ad.

c. Find the cost of an 11-line ad.

Assignment: Pg 296 #1-8, 10-12 continued

▶ 12.

Cathy is looking for a job as a bookkeeper. One online job site lists a job in a stereo store that pays 34.6K. Another job, in a clothing store, has a weekly salary of \$620.

a. Which job is the higher-paying job?

b. What is the difference in the weekly salaries of these two jobs? Round to the nearest dollar.