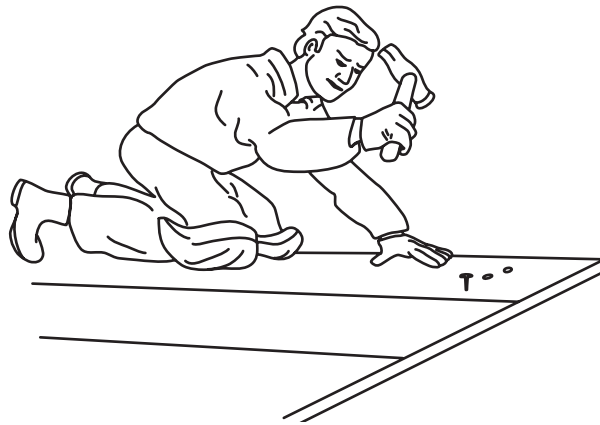


Lesson 5

Products, Routines, & Pay

Example Jeff works for his dad’s construction company. During the week, the company assigns him to jobs where the customer is charged \$30 an hour for his work. The company pays Jeff 40% of that. On Saturdays, they do charity projects at half the normal cost, and Jeff earns half his normal pay. The company pays a \$25 bonus to any employee who participates in a Saturday project. How much does Jeff earn for one eight-hour Saturday workday?



Solve

Step 1: Find the amount of money that Jeff normally earns per hour.

$$\begin{aligned} 40\% \text{ of } \$30 &= \frac{40}{100} \times \$30 \\ &= \$12 \end{aligned}$$

Step 2: Underline the sentence that tells you how much Jeff earns on Saturdays.

On Saturdays ... Jeff earns half his normal pay.

Step 3: Write the same sentence replacing “half his normal pay” with the actual amount.

Jeff earns half of \$12.

So Jeff earns $\frac{\$12}{2} = \6 an hour.

Step 4: Now, calculate the amount of money Jeff earns in eight hours on Saturday. (Remember the \$25 bonus for participation.)

$$\$6 \times 8 + \$25 = \$73$$

Answer the Question

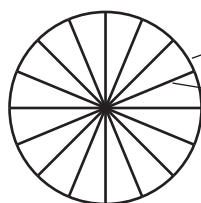
Step 5: Jeff earns \$73 on a Saturday.

 **Now try these problems.**

1. Ramone works for his uncle's marine engine company. During the week, the company charges him out at \$40 an hour and pays him 50% of that. On Saturdays, they do charity projects at one quarter of the normal price. For these projects, the company pays Ramone half his normal pay. The company pays a \$30 bonus to any employee who participates in a Saturday project. How much does Ramone earn for one six-hour Saturday workday? Fill in the blanks.

Answer: Ramone earns \$_____ × _____ + \$_____ = \$_____ for a six-hour Saturday workday.

2. Heather works in a circular showroom for wallpaper and tiles. Aisles divide the showroom like the spokes of a wheel. Each spoke aisle is 25 feet long. A spoke aisle goes from the center to the outer corridor that circles the entire showroom. In one eight-hour workday, Heather estimates that she walks around the outer corridor at least 17 times, and walks the length of six spoke aisles. What is the approximate distance that she walks in one day? ($C = 2\pi r$)



Outer corridor

Aisle (spoke)

- A 150 feet
- B 850 feet
- C 2,669 feet
- D 2,819 feet

3. Kim is a digital photo specialist. *PhotoSharp* retains her for \$3,000 a month to promote and sell digital cameras. The average (mean) sales price of the digital cameras they sell is \$154. The average (mean) cost that *PhotoSharp* buys the cameras for is \$45. How many cameras must Kim sell per month for the profits to equal or exceed her salary? Use the symbols, +, −, ×, ÷, to fill in the blanks and complete the equation.

Answer: \$3,000 _____ (\$154 _____ \$45) ≈ _____

★ Challenge Problem

You may want to talk this one over with a partner.

Roy runs a car service business. Each of his mechanics works an eight-hour day. They take a one-hour lunch break together that is not included in their eight hours. He keeps exactly four of his mechanics busy on the shop floor at any one time. They rotate so that one mechanic is always delivering cars. What is the minimum number of mechanics Roy can employ?

Draw a diagram to explain your answer.

Answer: _____

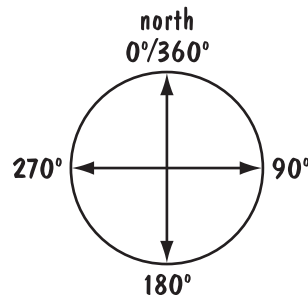
Review What You Learned

In this unit you have used mathematics to solve many problems. You have used mental math and estimation, practiced basic operations, and solved equations. You have also used statistics and probability, and measurement of circles.

These two pages give you a chance to review the mathematics you used and check your skills.

✓ Check Your Skills

1. Louis is a firefighter. He regularly takes the helicopter to check for fires or to help people in difficulty. Today, he heads out from the base in a direction of 290° . Mark that heading on the diagram. In which direction is he heading (north, northeast, east, southeast, south, southwest, west, or northwest)?



Answer: _____.

If you need to review, return to lesson 1 (page 2).

2. Elton works at a specialty bookstore in town. He earns \$12,300 a year. There is a job opening at the bookstore downtown. The salary is \$14,500. He writes an expression to find out the percent increase in salary. Is his expression correct? If not, correct it, and compute the answer.

$$(\$14,500 - \$12,300) \times \$14,500 \div 100\%$$

Answer: ___ Yes ___ No

If you need to review, return to lesson 2 (page 4).

3. Courton is a physical therapist. He prefers a work schedule that allows him to leave by 3 p.m. at the latest. Each week the hospital randomly assigns him to one of their four different work

schedules. What is the probability that he gets to leave work by 3 p.m. three weeks in a row?

Work Schedules		
Schedule	Start	Finish
A	7:00 a.m.	12:00 noon
B	10:00 a.m.	3:00 p.m.
C	1:00 p.m.	5:00 p.m.
D	3:00 p.m.	9:00 p.m.

Answer: _____

If you need to review, return to lesson 3 (page 6).

4. Beki works for her mother's public relations firm. During the week, the firm charges Beki out at \$35 an hour, and pays her 60% of that. On weekends, they do charity projects at half the normal cost. Beki earns half her normal pay. The firm pays a \$30 bonus to any employee who participates in a weekend project. How much does Beki earn for one ten-hour weekend project?

A \$105 **B** \$135 **C** \$175 **D** \$205

If you need to review, return to lesson 5 (page 10).

Write Your Own Problem

Choose a problem you liked from this unit. Write a similar problem using a situation and related facts from your own life. With a partner, share and solve these problems together. Discuss the mathematics and compare the steps you used. If you need to, rewrite or correct the problems. Write your edited problem and the answer here.

