

# POLK

1 How many grams of gold alloy that costs \$4 per gram must be mixed with 30 g of a gold alloy that costs \$7 per gram to make an alloy that costs \$5 per gram?

2 A file clerk needs 6 h to file an average day's paperwork. It takes a trainee 12 h to do the same job. How long will it take if they work together?

3 Luis can load his truck in 24 min. It takes his brother Ramon 40 min to load the truck. How long would it take them to do the job together?

4 Ross can do a job in 8 h. Brock can do the same job in 12 h. How long would it take them working together?

5 Bernice can wallpaper a room in 4 h. Annie can wallpaper the room in 8 h. How long would it take them working together?

**Solve the following problems. Assume that each situation can be described by a linear function.**

6 The prom committee asked a local restaurant to cater the senior prom. The restaurant charges \$1700 for a buffet for 100 people. It charges \$2450 for a buffet for 150 people and \$15 for each additional person after 150 people.

- Write a linear function to describe this situation.
- Find the cost of a buffet for 175 people.

7 An electrician charged \$90 for a two-hour job and \$140 for a four-hour job. At this rate, how much would be charged for an eight-hour job?

8 The relationship between hours spent studying and the average grade on an algebra exam was found to be a linear function. The average grade for students who spent 1 hour studying was 76, and it was 88 for students who spent 3 hours studying.

- What was the average grade for students who spent 4 hours studying?
- How many hours of studying would have resulted in an average grade of 80?

**Solve the following. Assume that each relationship is linear.**

9 Complete fossils have shown that certain plants with 2 mm wide stems were 36 mm tall, while plants with 3 mm stems were 51 mm tall. If a fragment of a plant is found with a 5 mm wide stem, how tall would you expect the plant to be?

10 When 30 students were asked about attending a school concert, 20 said they would go. From a different group of 45 students, 25 responded positively. How many will probably attend the concert if the total school population is 1170?