**Set up the equation and solve.**

1. A worker’s take-home pay is $492, after deductions totaling 40% of the gross pay have been subtracted. What is the gross pay?
2. A workman’s basic hourly wage is $10, but he receives one and a half times his hourly rate for any hours worked in excess of 40 per week. If his paycheck for the week is $595, how many hours of overtime did he work?
3. Six hundred people attended the premiere of a motion picture. Adult tickets cost $5, and children were admitted for $2. If box office receipts totaled $2400, how many children attended the

premiere?

1. A pharmacist is to prepare 15 mL of special eye drops for a glaucoma patient. The eye-drop solution must have a 2% active ingredient, but the pharmacist only has 10% solution and 1% solution in stock. How much of each type of solution should be used to fill the prescription?
2. Two children, who are 224 meters apart, start walking toward each other at the same instant at rates of 1.5 m/sec and 2 m/sec, respectively.
3. When will they meet?
4. How far will each have walked?
5. Two children own two-way radios that have a maximum range of 2 miles. One leaves a certain point at 1:00 P.M., walking due north at a rate of 4 mi/hr. The other leaves the same point at 1:15 P.M., traveling due south at 6 mi/hr. When will they be unable to communicate with one another?
6. A bullet is fired horizontally at a target, and the sound of its impact is heard 1.5 seconds later. If the speed of the bullet is 3300 ft/sec and the speed of sound is 1100 ft/sec, how far away is the target?
7. A woman begins jogging at 3:00 P.M., running due north at a 6-minute-mile pace. Later, she reverses direction and runs due south at a 7-minute-mile pace. If she returns to her starting point at 3:45 P.M., find the total number of miles run.
8. With water from one hose, a swimming pool can be filled in 8 hours. A second, larger hose used alone can fill the pool in 5 hours. How long would it take to fill the pool if both hoses were used simultaneously?
9. A college student has finished 48 credit hours with a GPA of 2.75. To get into the program she wishes to enter, she must have a GPA of 3.2. How many additional credit hours of 4.0 work will raise her GPA to 3.2?