

1 Karen's salary this year will be at least \$16,000.

a Pick a variable for Karen's salary. State precisely what real number it stands for.

Let x be **Karen's salary this year in dollars**.

b Write an inequality to represent the information you have about Karen's salary, using your variable.

$$x \geq 16\,000.$$

2 One long distance plan (IT) has a monthly fee of \$10 and charges \$0.03 per minute. Another plan (MC) has a monthly fee of \$6 and charges \$0.04 per minute. For what total monthly calling times is IT cheaper? (Show what calculation you make or what equation or inequality you solve, and include correct units in your final answer.)

Let t be the total monthly calling time in minutes. Then the monthly cost of the IT plan is $10 + 0.03t$ dollars, while the monthly cost of the MC plan is $6 + 0.04t$ dollars, so IT is cheaper exactly when

$$10 + 0.03t < 6 + 0.04t.$$

Solving this, I get

$$t > 400,$$

so IT is cheaper when the total monthly calling time is **more than 400 minutes**.