**STEP 2** Write an equation for the output value of $500.

$$y = 7.35x + 25$$
$$500 = 7.35x + 25$$
$$500 - 25 = 7.35x + 25 - 25$$
$$475 = 7.35x$$
$$\frac{475}{7.35} = \frac{7.35x}{7.35}$$
$$x \approx 64.6$$

**STEP 3** Interpret the results of solving the equation.

Since $x$ equals approximately 64.6 students, only 64 students can go on the tour since 65 students would put them over budget.

## YOU TRY IT! #3

Maddie sells $12 T-shirts at sporting events. The T-shirt company pays her a base pay of $45 for each event plus a 15% commission on the sales revenue from the T-shirts that she sells. How many T-shirts would she have to sell at an event to triple her base pay? Write a function representing the total pay $p$ for s T-shirts sold and a related equation for the total pay of 3 times $45, or $135. Solve the equation to determine the number of t-shirts she would have to sell.

## PRACTICE/HOMEWORK

*Use the situation described below to answer questions 1 – 5.*

### FINANCE

Yvonne is saving money for college, and currently has $1200 in a savings account. She plans to deposit $30 each week from her part-time job and then deposit birthday money from her Aunt Marlene ($40 each birthday). Her goal is to have saved $6,000 by the time she graduates from high school in three years.

**1.** Write a function that models Yvonne's savings.

**2.** Simplify your function.

**3.** Use your function to create a graph of Yvonne's savings.

**4.** Write an equation for Yvonne's savings goal, $6000.

**5.** Graph both equations on the same grid to determine when Yvonne will have her goal of $6,000 in savings. Will she reach her goal in the desired 3 years? Explain.

*Use the situation described below to answer questions 6 – 8.*

### FINANCE

Tommy works at a jewelry store. He earns $2100 a month and a yearly bonus of $500. He also earns a 9% commission on the jewelry he sells.

**6.** Write a function that models Tommy's total earnings, $t(n)$, in a year he sells n dollars of jewelry.

**7.** Write an equation with an output value of $32,000.

**8.** Graph both to determine the value of jewelry he must sell in order to earn $32,000 in the year.

*Use the situation described below to answer questions 9 – 12.*

### FINANCE

Christa is attending a county fair that charges a $12 entry fee. The entry fee includes 10 free rides, but any additional rides cost $1.50 each.

**9.** Write a function that models Christa's county fair expenses, $c(r)$, when she rides $r$ rides.

**10.** Create a table of values for the function (one has been started for you).

| NUMBER OF RIDES, $r$ | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|---|---|---|---|---|---|---|---|---|
| EXPENSE IN DOLLARS, $c(r)$ | 12 | | | | | | | |

**11.** Write an equation for the number of rides Christa rode if she spent $21.

**12.** Use your table to determine the number of rides Christa rode if she spent $21. To verify, solve the equation for the output value of 21.

*Use the situation described below to answer questions 13 – 16.*

## FINANCE

Vishal is joining a gym that has a $80 joining fee, and a monthly fee of $65. He has a coupon that gives him a 25% discount on the joining fee.

**13.** Write a function that models Vishal's gym costs, $c(m)$, for $m$ months of membership.

**14.** Create a table of values for the function (one has been started for you).

| NUMBER OF MONTHS, $m$ | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 |
|---|---|---|---|---|---|---|---|---|
| GYM COSTS, $c(m)$ | 450 | | | | | | | |

**15.** Write an equation for the number of months Vishal has gym membership if the costs are $970.

**16.** Use your table to determine the number of months he has gym membership if the costs are $970. To verify, solve the equation for the output value of 970.

*Use the situation described below to answer questions 17 – 18.*

## FINANCE

A local parking garage charges $15 for parking for up to 4 hours. They charge $3 for each additional hour of parking.

**17.** Write a function that models the parking fees, $p(h)$, for $h$ hours of parking. Write a related equation for the number of hours of parking if the costs are $33.

**18.** Find the number of parking hours if the costs are $33. Solve your equation using a graph, table, or algebraically.

*Use the situation described below to answer problems 19 – 20.*

## FINANCE

Tiffani wants to rent a jet ski to use while at the beach. She found a company that charges a $10 non-refundable deposit, plus $75 an hour. She had a coupon for $25 off her total cost. If $h$ represents the number of hours she rents the jet ski, then $t(h)$ represents her total cost.

**19.** Write a function that models her rental fees, $t(h)$, for $h$ hours of jet ski rental. Write a related equation for the number of hours she rented the jet ski if here costs are $285.

**20.** Find the number of hours Tiffani rented the jet ski if her costs are $285. Solve your equation using a graph, table, or algebraically.