Answer Key · Lesson 6.5: Applications of Systems

School Launch · Algebra I · Unit 6 · Worksheet A · for the parent

Key

1. 75 adult, 29 student

A concert sold 104 tickets. There were 46 more adult tickets than student tickets. How many of each were sold?

2. 39 adult, 90 student

A concert sold 129 tickets. There were 51 more student tickets than adult tickets. How many of each were sold?

3. 39 adult, 21 student

A concert sold 60 tickets. There were 18 more adult tickets than student tickets. How many of each were sold?

4. 53 adult, 47 student

1. Let x = adult tickets, y = student tickets.
2. Count: $x + y = 100$
3. Money: $12x + 4y = 824$
4. Solve the system.

Adult tickets cost \$12 and student tickets \$4. A school sold 100 tickets for \$824. How many of each?

5. 63 adult, 89 student

1. Let x = adult tickets, y = student tickets.
2. Count: $x + y = 152$
3. Money: $9x + 6y = 1101$
4. Solve the system.

Adult tickets cost \$9 and student tickets \$6. A school sold 152 tickets for \$1,101. How many of each?

6. 92 adult, 44 student

1. Let x = adult tickets, y = student tickets.
2. Count: $x + y = 136$
3. Money: $8x + 5y = 956$
4. Solve the system.

Adult tickets cost \$8 and student tickets \$5. A school sold 136 tickets for \$956. How many of each?

7. 65 adult, 72 student

1. Let x = adult tickets, y = student tickets.
2. Count: $x + y = 137$
3. Money: $12x + 4y = 1068$
4. Solve the system.

Adult tickets cost \$12 and student tickets \$4. A school sold 137 tickets for \$1,068. How many of each?

8. boat 18 mph, current 4 mph

1. Let b = boat speed, c = current.
2. Downstream: $2(b + c) = 44$
3. Upstream: $\frac{22}{7}(b - c) = 44$
4. Divide each by its time, then add the equations.

A boat travels 44 miles downstream in 2 hours and returns upstream in \frac{22}{7} hours. Find the speed of the boat in still water and of the current.

9. boat 17 mph, current 5 mph

1. Let b = boat speed, c = current.
2. Downstream: $3(b + c) = 66$
3. Upstream: $\frac{11}{2}(b - c) = 66$
4. Divide each by its time, then add the equations.

A boat travels 66 miles downstream in 3 hours and returns upstream in \frac{11}{2} hours. Find the speed of the boat in still water and of the current.

10. boat 13 mph, current 1 mph

1. Let b = boat speed, c = current.
2. Downstream: $3(b + c) = 42$
3. Upstream: $\frac{7}{2}(b - c) = 42$
4. Divide each by its time, then add the equations.

A boat travels 42 miles downstream in 3 hours and returns upstream in \frac{7}{2} hours. Find the speed of the boat in still water and of the current.