

**A.A.7: Writing Linear Systems 3: Analyze and solve verbal problems whose solution requires solving systems of linear equations in two variables**

- 1 Three times as many robins as cardinals visited a bird feeder. If a total of 20 robins and cardinals visited the feeder, how many were robins?
- 2 Jamie is 5 years older than her sister Amy. If the sum of their ages is 19, how old is Jamie?
- 3 The ratio of Tariq's telephone bill to Pria's telephone bill was 7:5. Tariq's bill was \$14 more than Pria's bill. What was Tariq's bill?
- 4 Two numbers are in the ratio 2:5. If 6 is subtracted from their sum, the result is 50. What is the larger number?
- 5 Sal keeps quarters, nickels, and dimes in his change jar. He has a total of 52 coins. He has three more quarters than dimes and five fewer nickels than dimes. How many dimes does Sal have?
- 6 At a concert, \$720 was collected for hot dogs, hamburgers, and soft drinks. All three items sold for \$1.00 each. Twice as many hot dogs were sold as hamburgers. Three times as many soft drinks were sold as hamburgers. The number of soft drinks sold was

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#### Answer Section

1 ANS:

15

$$c = 20 - r \quad r = 3(20 - r)$$

$$r = 3c \quad r = 60 - 3r$$

$$4r = 60$$

$$r = 15$$

PTS: 2

REF: 010104a

2 ANS:

12

$$j + a = 19 \quad j + a = 19$$

$$a = j - 5 \quad j + (j - 5) = 19$$

$$j = 12$$

PTS: 2

REF: 060201a

3 ANS:

\$49

$$5t = 7p$$

$$5t = 7p \quad 5t = 7(t - 14)$$

$$p = t - 14 \quad 5t = 7t - 98$$

$$t = 49$$

PTS: 2

REF: 080412a

4 ANS:

40

$$2l = 5s$$

$$2l = 5s \quad l + s - 6 = 50 \quad 2l = 5(56 - l)$$

$$s = 56 - l \quad 2l = 280 - 5l$$

$$l = 40$$

PTS: 2

REF: 060004a

5 ANS:

18

$$\begin{array}{rcl}
 n + d + q = 52 & & n + d + q = 52 \\
 q = d + 3 & (d - 5) + d + (d + 3) = 52 & \\
 n = d - 5 & & 3d - 2 = 52 \\
 & & d = 18
 \end{array}$$

PTS: 2

REF: 080606a

6 ANS:

360

$$\begin{array}{rcl}
 h + b + s = 720 & h + b + s = 720 & s = 3b \\
 h = 2b & 2b + b + 3b = 720 & s = 3(120) \\
 s = 3b & b = 120 & s = 360
 \end{array}$$

PTS: 2

REF: 089916a