

B Apply

52. Writing If a one-step equation includes addition, should you expect to solve it by using addition? Why or why not?

53. Think About a Plan Costumes for a play at a community theater cost \$1500, which is one third of the total budget. What is the total budget for the play?

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1500	1500	1500

- How can the model at the right help you solve the problem?
- How does the model tell you which operation to use in the equation?

54. Entertainment On a quiz show, a contestant was penalized 250 points for an incorrect answer, leaving the contestant with 1050 points. How many points did the contestant have before the penalty?

Solve each equation. Check your answer.

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|-------------------------------------|---------------------------------------|---------------------------------------|
| 55. $\frac{2}{7} = \frac{1}{3} + a$ | 56. $23 = 7x$ | 57. $z - 4\frac{2}{3} = 2\frac{2}{3}$ |
| 58. $\frac{2}{3}g = -4\frac{1}{2}$ | 59. $6\frac{1}{4} = \frac{r}{5}$ | 60. $h + 2.8 = -3.7$ |
| 61. $\frac{3}{2}f = \frac{1}{2}$ | 62. $-4 = \frac{2}{9}d$ | 63. $1.6m = 1.28$ |
| 64. $4d = -2.4$ | 65. $4\frac{1}{4} = 1\frac{3}{4} + p$ | 66. $-5.3 + z = 8.9$ |
| 67. $-2\frac{1}{2} = \frac{t}{10}$ | 68. $5b = 8.5$ | 69. $\frac{3}{5}n = -\frac{3}{10}$ |

70. Picnics At a party of 102 people, 17 lb of potato salad is served.

- Write and solve an equation to find how many people each pound of potato salad serves.
- Write and solve an equation to find the average number of pounds of potato salad that each person is served. Round your answer to the nearest hundredth.

71. Error Analysis Describe and correct the error in solving the equation at the right.

$$\begin{array}{c}
 \cancel{-36 = \frac{x}{9}} \\
 \cancel{\left(\frac{1}{9}\right)(-36) = \left(\frac{1}{9}\right)\left(\frac{x}{9}\right)} \\
 \cancel{-4 = x}
 \end{array}$$

72. U.S. History Between 1788 and 2008, the U.S. Constitution was amended 27 times. How many years have passed on average between one amendment and the next, to the nearest tenth of a year?

73. Volleyball In volleyball, players serve the ball to the opposing team. If the opposing team fails to hit the ball, the service is called an ace. A player's ace average is the number of aces served divided by the number of games played. A certain player has an ace average of 0.3 and has played in 70 games this season. How many aces has the player served?

74. Open-Ended Write a problem that you can model with a one-step equation. Write the equation and solve the problem.

75. Language According to one count, the letter *e* makes up one eighth of a typical document written in English. A document contains 2800 letters. About how many letters in the document are *not e*?