Practice Set

Solve for the given variable.

1. $x + 11 = 7$
2. $x - 1.1 = 3.2$
3. $7x = 21$
4. $4x = 1$
5. $\frac{5x}{12} = \frac{2}{3}$
6. $x + \frac{5}{2} = \frac{2}{3}$
7. $x - \frac{5}{6} = \frac{3}{8}$
8. $0.01x = 11$
9. $q - 13 = -13$
10. $z + 1.1 = 3.0001$
11. $21\ \mathrm{s} = 3$
12. $t + \frac{1}{2} = \frac{1}{3}$
13. $\frac{7f}{11} = \frac{7}{11}$
14. $\frac{3}{4} = -\frac{1}{2} \cdot y$
15. $6r = \frac{3}{8}$
16. $\frac{9b}{16} = \frac{3}{8}$
17. Peter is collecting tokens on breakfast cereal packets in order to get a model boat. In eight weeks he has collected 10 tokens. He needs 25 tokens for the boat. Write an equation and determine the following information.
    a) How many more tokens he needs to collect, n.
    b) How many tokens he collects per week, w.
    c) How many more weeks remain, or are left, until he can send off for his boat, r.
18. Juan has baked a cake and wants to sell it in his bakery. He is going to cut it into 12 slices and sell them individually. He wants to sell the cake for three times the cost of making it.

The ingredients cost him $\$8.50$, and he allowed $\$1.25$ to cover the cost of electricity to bake it. Write equations that describe the following statements

a) The amount of money that he sells the **c**ake for (c)
b) The amount of money he charges for each **s**lice (s).
c) The total **p**rofit he makes on the cake (p).

19. Solve the remaining two questions about Takeru Kobayashi.

Practice Set

1. Define *like terms.* Give an example of a pair of like terms and a pair of unlike terms.
2. Define *coefficient.*

In 3 – 7, combine the like terms.

3. $-7x + 39x$
4. $3x^2 + 21x + 5x + 10x^2$
5. $6xy + 7y + 5x + 9xy$
6. $10ab + 9 - 2ab$
7. $-7mn - 2mn^2 - 2mn + 8$
8. Explain the procedure used to solve $-5y - 9 = 74$

Solve and check your solution.

9. $1.3x - 0.7x = 12$
10. $6x - 1.3 = 3.2$
11. $5x - (3x + 2) = 1$
12. $4(x + 3) = 1$
13. $5q - 7 = \frac{2}{3}$
14. $\frac{3}{5}x + \frac{5}{2} = \frac{2}{3}$
15. $s - \frac{3s}{8} = \frac{5}{6}$
16. $0.1y + 11 = 0$
17. $\frac{5q-7}{12} = \frac{2}{3}$
18. $\frac{5(q-7)}{12} = \frac{2}{3}$
19. $33t - 99 = 0$
20. $5p - 2 = 32$
21. $14x + 9x = 161$
22. $3m - 1 + 4m = 5$
23. $8x + 3 = 11$
24. $24 = 2x + 6$

25. $66 = \frac{2}{3}k$

26. $\frac{5}{8} = \frac{1}{2}(a + 2)$

27. $16 = -3d - 5$

28. Jayden purchased a new pair of shoes. Including a 7% sales tax, he paid $84.68. How much were his shoes before sales tax?

29. A mechanic charges $98 for parts and $60 per hour for labor. Your bill totals $498.00, including parts and labor. How many hours did the mechanic work?

30. An electric guitar and amp set costs $1195.00. You are going to pay $250 as a down payment and pay the rest in 5 equal installments. How much should you pay each month?

31. Jade is stranded downtown with only $10 to get home. Taxis cost $0.75 per mile, but there is an additional $2.35 hire charge. Write a formula and use it to calculate how many miles she can travel with her money. Determine how many miles she can ride.

32. Jasmin's Dad is planning a surprise birthday party for her. He will hire a bouncy castle, and will provide party food for all the guests. The bouncy castle costs $150 dollars for the afternoon, and the food will cost $3.00 per person. Andrew, Jasmin's Dad, has a budget of $300. Write an equation to help him determine the maximum number of guests he can invite.

Practice Set

Use the Distributive Property to simplify the following expressions.

1. $(x+4)-2(x+5)$
2. $\frac{1}{2}(4z+6)$
3. $(4+5)-(5+2)$
4. $(x+2+7)$
5. $0.25(6q+32)$
6. $y(x+7)$
7. $-4.2(h-11)$
8. $13x(3y+z)$
9. $\frac{1}{2}(x-y)-4$
10. $0.6(0.2x+0.7)$
11. $(2-j)(-6)$
12. $(r+3)(-5)$
13. $6+(x-5)+7$
14. $6-(x-5)+7$
15. $4(m+7)-6(4-m)$
16. $-5(y-11)+2y$

Use the Distributive Property to simplify the following fractions.

17. $\frac{8x+12}{4}$
18. $\frac{9x+12}{3}$
19. $\frac{11x+12}{2}$
20. $\frac{3y+2}{6}$

21. $-\frac{6z-2}{3}$

22. $\frac{7-6p}{3}$

In 19 – 21, write an expression for each phrase

23. $\frac{2}{3}$ times the quantity of *n* plus 16

24. Twice the quantity of *m* minus 3

25. -4*x* times the quantity of *x* plus 2

26. A bookshelf has five shelves, and each shelf contains seven poetry books and eleven novels. How many of each type of book does the bookcase contain?

27. Use the Distributive Property to show how to simplify 6(19.99) in your head.

28. A student rewrote 4(9x + 10) as 36x + 10. Explain the student's error.

29. Use the Distributive Property to simplify 9(5998) in your head.

30. Amar is making giant holiday cookies for his friends at school. He makes each cookie with 6 oz. of cookie dough and decorates them with macadamia nuts. If Amar has 5lbs of cookie dough (1 lb = 16 oz) and 60 macadamia nuts, calculate the following.

a) How many (**full**) cookies he can make?
b) How many macadamia nuts he can put on each cookie, if each is to be identical?

Practice Set

1. $3(x-1)-2(x+3)=0$
2. $7(w+20)-w=5$
3. $9(x-2)=3x+3$
4. $2\left(5a-\frac{1}{3}\right)=\frac{2}{7}$
5. $\frac{2}{9}\left(i+\frac{2}{3}\right)=\frac{2}{5}$
6. $4\left(v+\frac{1}{4}\right)=\frac{35}{2}$
7. $22=2(p+2)$
8. $-(m+4)=-5$
9. $48=4(n+4)$
10. $\frac{6}{5}\left(v-\frac{3}{5}\right)=\frac{6}{25}$
11. $-10(b-3)=-100$
12. $6v+6(4v+1)=-6$
13. $-46=-4(3s+4)-6$
14. $8(1+7m)+6=14$
15. $0=-7(6+3k)$
16. $35=-7(2-x)$
17. $-3(3a+1)-7a=-35$
18. $-2\left(n+\frac{7}{3}\right)=-\frac{14}{3}$
19. $-\frac{59}{60}=\frac{1}{6}\left(-\frac{4}{3}r-5\right)$
20. $\frac{4y+3}{7}=9$
21. $(c+3)-2c-(1-3c)=2$

22. $5m - 3[7 - (1 - 2m)] = 0$

23. $f - 1 + 2f + f - 3 = -4$

24. Find four consecutive even integers whose sum is 244.

25. Four more than two-thirds of a number is 22. What is the number?

26. The total cost of lunch is \$3.50, consisting of a juice, sandwich, and pear. The juice cost 1.5 times as much as the pear. The sandwich costs \$1.40 more than the pear. What is the price of the pear?

27. Camden High has five times as many desktop computers as laptops. The school has 65 desktop computers. How many laptops does it have?

28. A realtor receives a commission of \$7.00 for every \$100 of a home's selling price. How much was the selling price of a home if the realtor earned \$5,389.12 in commission?

Practice Set

1. $3(x-1)=2(x+3)$
2. $7(x+20)=x+5$
3. $9(x-2)=3x+3$
4. $2\left(a-\frac{1}{3}\right)=\frac{2}{5}\left(a+\frac{2}{3}\right)$
5. $\frac{2}{7}\left(t+\frac{2}{3}\right)=\frac{1}{5}\left(t-\frac{2}{3}\right)$
6. $\frac{1}{7}\left(v+\frac{1}{4}\right)=2\left(\frac{3v}{2}-\frac{5}{2}\right)$
7. $\frac{y-4}{11}=\frac{2}{5}\cdot\frac{2y+1}{3}$
8. $\frac{z}{16}=\frac{2(3z+1)}{9}$
9. $\frac{q}{16}+\frac{q}{6}=\frac{(3q+1)}{9}+\frac{3}{2}$
10. $21+3b=6-6(1-4b)$
11. $-2x+8=8(1-4x)$
12. $3(-5v-4)=-6v-39$
13. $-5(5k+7)=25+5k$
14. Manoj and Tamar are arguing about how a number trick they heard goes. Tamar tells Andrew to think of a number, multiply it by five and subtract three from the result. Then Manoj tells Andrew to think of a number add five and multiply the result by three. Andrew says that whichever way he does the trick he gets the same answer. What was Andrew's number?

15. I have enough money to buy five regular priced CDs and have $6 left over. However all CDs are on sale today, for $4 less than usual. If I borrow $2, I can afford nine of them. How much are CDs on sale for today?

16. Jaime has a bank account with a balance of $412 and is saving $18 each week. George has a bank account with a balance of $874 and is spending $44 dollars each week. When will the two have the same amount of money?

17. Cell phone plan A charges $75.00 each month and $0.05 per text. Cell phone plan B charges $109 dollars and $0.00 per text.
    a. At how many texts will the two plans charge the same?

b. Suppose you plan to text 3,000 times per month. Which plan should you choose? Why?

18. To rent a dunk tank Modern Rental charges $150 per day. To rent the same tank, Budgetwise charges $7.75 per hour.
    a. When will the two companies charge the same?
    b. You will need the tank for a 24-hour fundraise-a-thon. Which company should you choose?