

## Section 14-6: Solving Equations with Fractional Coefficients

1. 010636a, P.I. A.A.25

Solve for  $x$ :  $\frac{1}{16}x + \frac{1}{4} = \frac{1}{2}$

2. 080708a, P.I. A.A.25

In the equation  $\frac{1}{4}n + 5 = 5\frac{1}{2}$ ,  $n$  is equal to

[A]  $\frac{1}{2}$       [B]  $\frac{1}{8}$       [C] 2      [D] 8

3. 010719a, P.I. A.A.25

What is the value of  $x$  in the equation

$$\frac{x}{2} + \frac{x}{6} = 2?$$

[A] 12      [B] 8      [C]  $\frac{1}{4}$       [D] 3

4. 010507a, P.I. A.A.25

What is the solution set of the equation

$$\frac{x}{5} + \frac{x}{2} = 14?$$

[A] {20}      [B] {10}      [C] {49}      [D] {4}

5. 080406a, P.I. A.A.22

What is the value of  $n$  in the equation  $0.6(n + 10) = 3.6$ ?

[A] -4      [B] -0.4      [C] 4      [D] 5

6. 010204a, P.I. A.A.25

What is the value of  $x$  in the equation

$$\frac{3}{4}x + 2 = \frac{5}{4}x - 6?$$

[A] 16      [B] -16      [C] 4      [D] -4

7. 060704a, P.I. A.A.25

What is the value of  $w$  in the equation

$$\frac{1}{2}w + 7 = 2w - 2?$$

[A] 3.6      [B] 2      [C]  $3\frac{1}{3}$       [D] 6

8. 080620a, P.I. A.A.25

What is the value of  $w$  in the equation

$$\frac{3}{4}w + 8 = \frac{1}{3}w - 7?$$

[A] 2.4      [B] -36      [C] -0.2      [D] -13.846

9. 060323a, P.I. A.A.22

Solve for  $m$ :  $0.6m + 3 = 2m + 0.2$

10. 089921a, P.I. A.A.22  
Solve for  $x$ :  $2(x - 3) = 1.2 - x$
11. 060634a, P.I. A.A.25  
Solve for  $x$ :  $3.3 - x = 3(x - 1.7)$
12. 069925a, P.I. A.A.6  
Sara's telephone service costs \$21 per month plus \$0.25 for each local call, and long-distance calls are extra. Last month, Sara's bill was \$36.64, and it included \$6.14 in long-distance charges. How many local calls did she make?
13. 060406a, P.I. A.A.6  
Parking charges at Superior Parking Garage are \$5.00 for the first hour and \$1.50 for each additional 30 minutes. If Margo has \$12.50, what is the maximum amount of time she will be able to park her car at the garage?
- [A]  $6\frac{1}{2}$  hours      [B]  $3\frac{1}{2}$  hours  
[C] 6 hours      [D]  $2\frac{1}{2}$  hours
14. 010726a, P.I. A.A.6  
Mario paid \$44.25 in taxi fare from the hotel to the airport. The cab charged \$2.25 for the first mile plus \$3.50 for each additional mile. How many miles was it from the hotel to the airport?
- [A] 12      [B] 10      [C] 11      [D] 13
15. 010635a, P.I. A.A.6  
A candy store sells 8-pound bags of mixed hazelnuts and cashews. If  $c$  pounds of cashews are in a bag, the price  $p$  of the bag can be found using the formula  $p = 2.59c + 1.72(8 - c)$ . If one bag is priced at \$18.11, how many pounds of cashews does it contain?
16. 060418a, P.I. A.A.25  
The number of people on the school board is represented by  $x$ . Two subcommittees with an equal number of members are formed, one with  $\frac{2}{3}x - 5$  members and the other with  $\frac{x}{4}$  members. How many people are on the school board?
- [A] 12      [B] 20      [C] 4      [D] 8
17. 060111a, P.I. A.A.25  
If one-half of a number is 8 less than two-thirds of the number, what is the number?
- [A] 54      [B] 24      [C] 48      [D] 32

- [3] 4, and appropriate work is shown.  
[2] Appropriate work is shown, but one computational error is made.  
[1] Appropriate work is shown, but two or more computational errors are made.  
or [1] Appropriate work is shown, but one conceptual error is made.  
or [1] 4, but no work is shown.  
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.
- [1] \_\_\_\_\_
- [2] C
- [3] D
- [4] A
- [5] A
- [6] A
- [7] D
- [8] B
- [2] 2, and appropriate work is shown.  
[1] Appropriate work is shown, but one computational error or one conceptual error is made.  
or [1] 2, but no work is shown.  
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.
- [9] \_\_\_\_\_
- [2] 2.4 and appropriate work is shown.  
[1] The student shows correct use of the distributive property to obtain  $2x - 6$  or other appropriate algebraic technique.  
or [1] 2.4 and no work is shown.  
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.
- [10] \_\_\_\_\_

- [2] 2.1, and appropriate work is shown.  
[1] Appropriate work is shown, but one computational error is made.  
or [1] Appropriate work is shown, but one conceptual error is made.  
or [1] 2.1, but no work is shown.  
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.
- [11] \_\_\_\_\_
- [2] 38 and an appropriate method is shown, such as  $36.64 - (21 + 6.14) = 9.50$  and  $\frac{9.50}{.25} = 38$  or an equation such as  $21 + .25c + 6.14 = 36.64$ .  
[1] 38 and no work is shown.  
or [1] An appropriate method or equation is shown, but one computational mistake is made.  
or [1] The answer of \$9.50 for local calls is found but is not divided by .25.  
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.
- [12] \_\_\_\_\_
- [13] B
- [14] D
- [2] 5 and appropriate work is shown, such as substituting \$18.11 for  $p$  and solving the equation correctly, or trial and error with at least three trials and appropriate checks.  
[1] Appropriate work is shown, but one computational error is made.  
or [1] Appropriate work is shown, but one conceptual error is made.  
or [1] 5, but no work or fewer than three trials with appropriate checks are shown.  
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.
- [15] \_\_\_\_\_
- [16] A
- [17] C