

A.A.25: Solve equations involving fractional expressions. Note: Expressions which result in linear equations in one variable.

1. 080708a, P.I. A.A.25

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

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

2. 060804a, P.I. A.A.25

What is the value of w in the equation $0.04w + 0.6 = 2.4$?

[A] 4.5 [B] 45 [C] 0.045 [D] 0.45

3. 010906a, P.I. A.A.25

If $0.02x + 0.7 = 0.8$, then x is equal to

[A] 50 [B] 5 [C] 2 [D] 0.5

4. 010719a, P.I. A.A.25

What is the value of x in the equation

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

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

5. 010507a, P.I. A.A.25

What is the solution set of the equation

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

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

6. 060907ia, P.I. A.A.25

Which value of x is the solution of the

$$\text{equation } \frac{2x}{3} + \frac{x}{6} = 5?$$

[A] 15 [B] 6 [C] 10 [D] 30

7. 080406a, P.I. A.A.25

What is the value of n in the equation

$$0.6(n + 10) = 3.6?$$

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

8. 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] 4 [B] -4 [C] -16 [D] 16

9. 060704a, P.I. A.A.25
What is the value of w in the equation
 $\frac{1}{2}w + 7 = 2w - 2$?
- [A] $3\frac{1}{3}$ [B] 2 [C] 3.6 [D] 6
10. 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] -36 [B] -0.2 [C] -13.846 [D] 2.4
11. 010636a, P.I. A.A.25
Solve for x : $\frac{1}{16}x + \frac{1}{4} = \frac{1}{2}$
12. 060323a, P.I. A.A.25
Solve for m : $0.6m + 3 = 2m + 0.2$
13. 080831a, P.I. A.A.25
Solve for x : $0.35x + 0.6 = 0.1x + 1$
14. 089921a, P.I. A.A.25
Solve for x : $2(x - 3) = 1.2 - x$
15. 060634a, P.I. A.A.25
Solve for x : $3.3 - x = 3(x - 1.7)$
16. 080909ia, P.I. A.A.25
Solve for x : $\frac{3}{5}(x + 2) = x - 4$
- [A] 15 [B] 13 [C] 8 [D] 23
17. 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] 4 [B] 12 [C] 8 [D] 20
18. 010635a, P.I. A.A.25
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?

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[1] D

[2] B

[3] B

[4] B

[5] B

[6] B

[7] B

[8] D

[9] D

[10] A

[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

[11] incorrect procedure.

[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

[12] incorrect procedure.

[2] 1.6, 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] 1.6, 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

[13] incorrect procedure.

[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

[14] incorrect procedure.

[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

[15] incorrect procedure.

[16] B

[17] B

[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

[18] incorrect procedure.
