

NAME: _____

A.A.26: Solve algebraic proportions in one variable which result in linear or quadratic equations.

1. 010906ia, P.I. A.A.26

What is the solution of $\frac{k+4}{2} = \frac{k+9}{3}$?

[A] 14 [B] 1 [C] 6 [D] 5

2. 060826ia, P.I. A.A.26

Which value of x is a solution of $\frac{5}{x} = \frac{x+13}{6}$?

[A] -15 [B] -10 [C] -3 [D] -2

3. 060612a, P.I. A.A.26

What is the value of x in the equation

$$\frac{x}{2x+1} = \frac{4}{3}?$$

[A] $-\frac{1}{5}$ [B] $-\frac{5}{4}$ [C] -5 [D] $-\frac{4}{5}$

4. 010918ia, P.I. A.A.26

What is the value of x in the equation

$$\frac{2}{x} - 3 = \frac{26}{x}?$$

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

5. 080820ia, P.I. A.A.26

Which value of x is the solution of

$$\frac{2x}{5} + \frac{1}{3} = \frac{7x-2}{15}?$$

[A] 3 [B] $\frac{3}{5}$ [C] 7 [D] $\frac{31}{26}$

6. 080722b, P.I. A.A.26

Solve for all values of x : $\frac{2}{x+1} = x$

7. 010131a, P.I. A.A.26

Solve algebraically for x : $\frac{1}{x} = \frac{x+1}{6}$

8. 080439a, P.I. A.A.26

Solve for all values of x that satisfy the

$$\text{equation } \frac{x}{x+3} = \frac{5}{x+7}.$$

9. fall0739ia, P.I. A.A.26

Solve for x : $\frac{x+1}{x} = \frac{-7}{x-12}$

A.A.26: Solve algebraic proportions in one variable which result in linear or quadratic equations.

[1] C

[2] A

[3] D

[4] B

[5] C

[2] 1 and -2, 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] Appropriate work is shown, but only one value is found.

or [1] 1 and -2, but no work is shown.

[0] 1 or -2, but no work is shown.

or [0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an

[6] obviously incorrect procedure.

[4] 2 and -3, and a correct quadratic equation is shown, such as $x(x + 1) = 6$, and solved algebraically.

[3] The student shows a correct quadratic equation but makes one algebraic error and carries it to solution or no solution for the equation generated.

or [3] Correct work is shown, but only one root is found as the answer.

[2] A correct quadratic equation is used, but two or more errors are made.

or [2] An incorrect quadratic equation of equal difficulty is shown and solved appropriately.

[1] The student cross multiplies but produces only a linear equation that is solved appropriately.

or [1] 2 and -3, but no algebraic work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[7] incorrect procedure.

- [4] 3 and -5 , and appropriate work is shown, such as $x(x + 7) = 5(x + 3)$ or trial and error with at least three trials and appropriate checks for each solution.
- [3] Appropriate work is shown, but one computational or factoring error is made.
or [3] Appropriate work is shown, but only one correct solution is found.
or [3] The trial-and-error method is used to find both correct solutions, but only two trials and appropriate checks are shown for each solution.
- [2] Appropriate work is shown, but two or more computational or factoring errors are made.
or [2] A correct quadratic equation is written and factored, but no further correct work is shown.
or [2] The trial-and-error method is attempted and at least six systematic trials and appropriate checks are shown, but neither solution is found.
- [1] A correct quadratic equation is written, but no further correct work is shown.
or [1] 3 and -5 , but no work or only one trial with an appropriate check is shown.
- [0] 3 or -5 , but no work or only one trial with an appropriate check is shown.
or [0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.
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- [8] _____
- [4] 6 and -2 , and appropriate work is shown, such as an algebraic solution or trial and error with at least three trials and appropriate checks.
- [3] Appropriate work is shown, but one computational or factoring error is made.
or [3] Appropriate work is shown, but only one solution is found.
- [2] The correct quadratic equation is written in standard form.
or [2] Appropriate work is shown, but two or more computational or factoring errors are made.
or [2] Appropriate work is shown, but one conceptual error is made.
or [2] The trial-and-error method is used to find at least one solution, but only two trials and appropriate checks are shown.
or [2] The trial-and-error method is attempted and at least six systematic trials and appropriate checks are shown, but no solution is found.
- [1] An incorrect quadratic equation of equal difficulty is solved appropriately.
[1] $x^2 - 11x - 12 = -7x$, but no further correct work is shown.
or [1] 6 and -2 , but no work or only one trial with an appropriate check is shown.
or [1] An incorrect equation of a lesser degree of difficulty is solved appropriately.
or [1] Appropriate work is shown, but one conceptual error and one computational or factoring error are made.
- [0] 6 or -2 , but no work is shown.
or [0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.
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- [9] _____