New Maths GCSE: A18 - Equations with Fractions (Quadratic): Step-by-step 1

Name:..   Date:......................................

Step 1

$$\frac{5}{2x+1} + \frac{6}{x+1} = 3$$

Which of the following is a correct next step to solve this equation?

A $5 + \frac{6}{x+1} = 3(2x+1)$

B $\frac{2x+1}{5} + \frac{x+1}{6} = 3$

C $\frac{5(2x+1)}{2x+1} + \frac{6(2x+1)}{(x+1)(2x+1)} = 3(2x+1)$

D $5 + \frac{6(2x+1)}{x+1} = 3(2x+1)$

Correct Answer: A B C D

Explanation:

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Step 2

$$5 + \frac{6(2x+1)}{x+1} = 3(2x+1)$$

Which of the following is a correct next step to solve this equation?

A $5 + 6(2x+1) = 3(2x+1)(x+1)$

B $5(x+1) + 6(2x+1) = 3(x+1)$

C $5(x+1) + 6(2x+1) = 3(2x+1)(x+1)$

D $5 + 6(2x+1) = 3(2x+1) - (x+1)$

Correct Answer: A B C D

Explanation:

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Step 3

$$5(x+1) + 6(2x+1) = 3(2x+1)(x+1)$$

Which of the following is a correct next step to solve this equation?

A $5x + 1 + 12x + 1 = (6x+1)(x+1)$

B $5x + 5 + 12x + 6 = 2x^2 + 3x + 1$

C $5x + 5 + 12x + 6 = 6x^2 + 9x + 3$

D $5x + 5 + 12x + 6 = 6x^2 + 3x + 1$

Correct Answer: A B C D

Explanation:

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Step 4

$$5x + 5 + 12x + 6 = 6x^2 + 9x + 3$$

Which of the following is a correct next step to solve this equation?

A $0 = 6x^2 - 8x - 8$

B $5 + 5 + 12 + 6 = 2x + 9 + 3$

C $0 = 6x^2 + 20x + 14$

D $0 = 6x^2 - 20x - 14$

Correct Answer: A B C D

Explanation:

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Step 5

$$0 = 6x^2 - 8x - 8$$

Which of the following is the best next step to solve this equation?

A $0 = 6x - 8 - 8$

B $0 = (6x + 8)(x - 1)$

C $0 = (6x - 8)(x + 1)$

D $0 = 3x^2 - 4x - 4$

Correct Answer: A B C D

Explanation:

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Step 6

$$0 = 3x^2 - 4x - 4$$

Which of the following is the best next step to solve this equation?

A $4x + 4 = 3x^2$

B $0 = (3x + 2)(x - 2)$

C $0 = (3x - 2)(x + 2)$

D $0 = 3x - 4 - 4$

Correct Answer: A B C D

Explanation:

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Step 7

$$0 = (3x + 2)(x - 2)$$

Which of the following is the best next step to solve this equation?

A $x = -\frac{2}{3}, \ x = 2$

B $x = -2, \ x = 2$

C $-(3x + 2) = (x - 2)$

D $x = \frac{2}{3}, \ x = -2$

Correct Answer: A B C D

Explanation:

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