

MAT.08.SR.1.000EE.D.201

Sample Item ID:	MAT.08.SR.1.000EE.D.201
Grade:	08
Claim(s):	Claim 1: Concepts and Procedures Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.
Assessment Target(s):	1 D: Analyze and solve linear equations and pairs of simultaneous linear equations.
Content Domain:	Equations and Expressions
Standard(s):	8.EE.7
Mathematical Practice(s):	1, 7, 8
DOK:	2
Item Type:	SR
Score Points:	1
Difficulty:	M
Key:	B,C
Stimulus/Source:	
Target-Specific Attributes (e.g., accessibility issues):	
Notes:	Calculator tool should be turned on for this item.

Three students solved the equation $3(5x - 14) = 18$ in different ways, but each student arrived at the correct answer. Select **all** of the solutions that show a correct method for solving the equation.

(A) $3(5x - 14) = 18$

$$\begin{array}{r} 8x - 14 = 18 \\ + 14 \quad + 14 \\ \hline 8x = 32 \\ \frac{8x}{8} = \frac{32}{8} \\ x = 4 \end{array}$$

(B) $\frac{1}{3} \cdot 3(5x - 14) = 18 \cdot \frac{1}{3}$

$$\begin{array}{r} 5x - 14 = 6 \\ + 14 \quad + 14 \\ \hline 5x = 20 \\ \frac{5x}{5} = \frac{20}{5} \\ x = 4 \end{array}$$

(C) $3(5x - 14) = 18$

$$\begin{array}{r} \frac{15x}{15} - \frac{42}{15} = \frac{18}{15} \\ + \frac{42}{15} \quad + \frac{42}{15} \\ \hline x = \frac{60}{15} \\ x = 4 \end{array}$$

Key and Distractor Analysis:

- A. This solution is the simplest to follow, but the method is incorrect.
- B. Key. Although the method in this solution is correct, it is not the most commonly used method for solving equations like this, so students may think it is incorrect.
- C. Key. Although the method in this solution is correct, it is not the most commonly used method for solving equations like this, so students may think it is incorrect.