



Exit Ticket H3 - Solving Simultaneous Equations

Name:.....

Date:.....

Dominic is purchasing pens and pencils.

5 pens and 6 pencils cost £2.13.
3 pens and 7 pencils cost £1.55.

Let x be the cost, in pence, of a pen and y be the cost, in pence, of a pencil.

Which **one** of the following pairs of simultaneous equations is **correct** for the information given?

A $5x + 6y = 2.13$
 $3x + 7y = 1.55$

B $11(x + y) = 213$
 $10(x + y) = 155$

C $5x + 6y = 213$
 $3x + 7y = 155$

D $5x + 6y = \frac{213}{11}$
 $3x + 7y = \frac{155}{10}$

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Correct Answer: A B C D

Explanation:

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Dasras is attempting to solve the following simultaneous equations.

$$3x - 4y = 5 \quad \text{(i)}$$

$$2x + 5y = 1 \quad \text{(ii)}$$

His attempt is shown in the following four steps below, but the answer is incorrect.

In which of the following steps, **A, B, C, D** does the **first** error appear?

A Multiply (i) by 5 giving $15x - 20y = 25$ (iii)
Multiply (ii) by 4 giving $8x + 20y = 4$ (iv)

B Subtract (iv) from (iii) giving $7x = 21$

C Divide by 7 giving $x = 3$

D Substitute into (i) to give $9 - 4y = 5$ and hence $y = 1$

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Correct Answer: A B C D

Explanation:

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Emma is attempting to solve this pair of simultaneous equations.

$$3x + 2y = 9 \quad \text{(i)}$$

$$4x - y = 1 \quad \text{(ii)}$$

Her working is shown in the four steps below, but her final answer is incorrect.

In **which** of the following steps **A, B, C** or **D** does her **first** error occur?

A Multiply (ii) by 2: $8x - 2y = 2$ (iii)

B Add (iii) and (i): $11x = 11$ (iv)

C Divide both sides of (iv) by 11: $x = 1$

D Substitute this value of x into (ii): $4 - y = 1$ gives $y = 5$

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Correct Answer: A B C D

Explanation:

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