Algebra lesson 13 quiz answers

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9:14 PM

Solve the following simultaneous equations by elimination:

1) $2x + y = 10$ — ①
$2x + 2y = 15$ — ②

② − ① : $y = 5$

Sub $y = 5$ into ① : $2x + 5 = 10$

$2x = 5$

$x = \frac{5}{2}$

2) $3x + 2y = 10$ — ①
$4x + 3y = 16$ — ②

① × 3 : $9x + 6y = 30$

② × 2 : $8x + 6y = 32$

① − ② : $x = 2$

Sub $x = 2$ into ① :

$3 \times 2 + 2y = 10$

$6 + 2y = 10$

$2y = 10 - 6$

$2y = 4$

$y = \frac{4}{2} = 2$

3) $2x + 5y + 6 = 0$ — ①
$2x = 3y - 10$ — ②

rearrange ② : $2x - 3y + 10 = 0$

① − ② : $8y - 4 = 0$

$8y = 4$

$y = \frac{4}{8} = \frac{1}{2}$

Sub $y = \frac{1}{2}$ into ②

$2x = 3 \times \frac{1}{2} - 10$

$2x = -8.5$

$x = \frac{-8.5}{2} = -4.25$