Equations: meaning, solutions and equal operations

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Name: _____ Class: _____ Date: _____

Worked example 1

Is x = 4 a solution of the equation? Calculate both original sides to justify your answer.

$$3x + 2 = 14$$

Guided attempt 2

Three identical notebooks and a single 2-dollar packing fee cost 17 dollars. Let x be the price of one notebook. Write an equation and find x.

1. Notebook cost = ____; total equation: ____ = 17.
2. After subtracting 2: ____ x = ____.
3. x = ____ dollars; check: ____.

Prerequisite 3

Is 2x + 3, by itself, an equation in an unknown? Identify the missing feature.

Prerequisite 4

Is 7 + 5 = 12 an equation containing an unknown, as required by this lesson’s definition? Explain.

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Independent practice 5

Solve, then verify by substitution.

$$2x - 3 = 7$$

Independent practice 6

From x + 6 = 10, a learner subtracts 6 from both sides and writes x = 4. Does this preserve the solutions? Explain.

Independent practice 7

From x/3 = 4, a learner multiplies both sides by 3 and obtains x = 12. Is this equivalent?

Independent practice 8

From x + 3 = 8, a learner subtracts 3 only on the left and writes x = 8. Explain why this does not preserve the equation.

Exit question 9

A number plus 7 equals 19. Let the number be x, write an equation and find it.

Exit question 10

Verify whether x = −2 solves the equation. Show the original left and right sides.

$$4x + 1 = -7$$