

SAMPLE SECTION I [GOAL 8-10 Minutes All Correct]

Score: ____/9

Solve these linear equations:

1. $\frac{1}{x} + \frac{2}{3} + \frac{3}{x} = 1$

2. $\frac{16 \cdot (48 - x)}{800} = \frac{40 - x}{40}$

3. $16(x - 4) + 54 = \frac{187x}{12}$

4. $\frac{5x - 800}{4x - 800} = \frac{3}{2}$

5. $4x + \frac{5x}{7} = 9 + \frac{3x}{7}$

6. $\frac{3x}{2} + \frac{5x}{4} + \frac{7x}{8} = 3 + \frac{5}{2} + \frac{7}{4}$

7. $.3(x - 1) + .5(x + 6) = .4(3x - 4) + 1.3$

Solve for the variable listed next to each equation in terms of other variables:

8. $11y + 9 - 12x^2 - 12 - 4x^2 = 0$
For x

9. $9x + 2y^2 = 5y^2 + 7x - 2$
For y

SAMPLE

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1-3. The points (0, 9) and (x, 5) are on a line.

1. What is x when the slope is -1?
2. Write the equation of the line in point/slope format.
3. Write the equation of the line in slope/intercept format.

4-6. Suppose that a line passes through the points (0,p) and (q,0).

4. What is the slope of the line?
5. What is the equation of the line in point/slope format?
6. What is the equation of the line in slope/intercept format?

Word Problems:

7. You are driving along a highway at constant speed of 65 mph. You observe a car $\frac{1}{2}$ mile behind you. The car is moving fast and zooms by you exactly two minutes later. How fast is the car traveling?

8. Two trains traveling in opposite directions, each at 60 miles per hour, cross each other. It takes them 1 min 24 sec to cross each other completely. The length of one of them is $1\frac{3}{4}$ times of the other. What is the length of each train in yards?

9. A typist types at a certain speed that is calculated in words per minute. He has to type a document that has 2640 words. If he can type 10% more words each minute, he will take 4 minutes less to type the document. What is his current typing speed in words per minute?
