Subject: Mathematics

Second Exam Second Semester / Remedial Plan

Name: **Grade-Section**: 8 CS
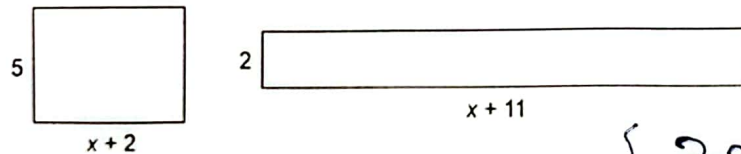
Date: **Teacher**: Zain Hattar

Objective: Revise constructing expressions, changing the subject of a formula, constructing and solving linear equations, solving equations with the unknown in the denominator.

Question 1

These two rectangles have the same area. Find the value of x by constructing and solving an equation. Show your work.

5 | $x + 2$

2 | $x + 11$

$$5(x+2) = 2(x+11)$$
$$5x + 10 = 2x + 22$$
$$-2x \qquad -2x$$

$$3x + 10 = 22$$
$$-10 \qquad -10$$
$$3x = 12$$
$$\boxed{x = 4}$$

Question 2

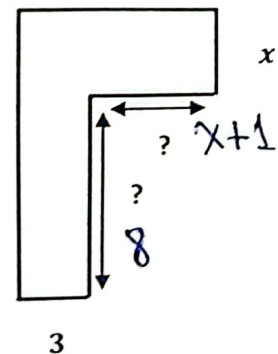Find an expression for the perimeter of the following shape.

Simplify your expression!

$x + 4$

$x + 8$

x

$x + 1$

?

8

3

$$P = x + 4 + x + x + 1 + 8 + 3 + x + 8$$

$$P = 4x + 24$$

Question 3

Make x the subject of these formulae. Show your work.

a) $y = 7 - x$

$$x = 7 - y.$$

b) $y = \frac{5x}{9} - 1$

$$y + 1 = \frac{5x}{9}$$

$$5x = 9(y+1)$$

$$x = \frac{9(y+1)}{5}.$$

c) $y = \frac{x+w}{4}$

$$4y = x + w$$

$$x = 4y - w.$$

d) $y = \sqrt{8xm}$

$$y^2 = 8xm$$

$$x = \frac{y^2}{8m},$$

Question 5

Laith thinks of a number, n. He subtracts 1 then divides the result by 3. The answer is the same as 2 times the number take away 2.

a) Write an equation to show this information.

$$\frac{(n-1)}{3} = 2n - 2$$

b) Solve your equation to find what number is Laith thinking of?

$$n - 1 = 3(2n-2)$$
$$n - 1 = 6n - 6$$
$$-6n \qquad -6n$$

$$-5n - 1 = -6$$
$$+1 \qquad +1$$

$$\frac{-5n}{-5} = \frac{-5}{-5}$$

$$\boxed{n = 1}$$

Question 6

The sum of three consecutive even numbers is 84.

Let x be the first number.

a) Write an equation to show this information.

$$X + X + 2 + X + 4 = 84$$
$$3X + 6 = 84$$

b) Solve your equation.

$$3X + 6 = 84$$
$$-6 \quad -6$$

$$\frac{3X}{3} = \frac{78}{3}$$

$$\boxed{X = 26}$$

c) Find all of the numbers.

26, 28, and 30

Thank you!