MATH3 (814013) – SPRING 2007

WORKSHEET 14

Question (1) : Solve the following equations for *y:*

1) $\frac{1}{x+2}=\frac{2y+1}{1-y}-1$ for y

2) $\left(\sqrt{y^2-x^2}-1\right)^2=1$ for y

3) $xy-\frac{y}{x+1}=\frac{1}{x+1}$ for y

4) $\sqrt{\frac{x-1}{y+1}}=x-1$ for y

5) $\frac{y-1}{2+y}=1-\frac{2}{1-x}$ for y

6) $\sqrt{1+y}=\sqrt{x}+\sqrt{y}$ for y

7) $a(y-a)-2b(y-3b)=ab$ for y

8) $\frac{y+b}{3a-4b}=\frac{y-a}{2a-5b}$ for y

9) $\frac{x+y}{y-\frac{x+y}{x-1}}=1$ for y

10) $S=y+yxz$ for y

Question (2) : Solve the following equations:

1) $\frac{2x}{3}-\frac{x}{2}+6=\frac{5x}{6}-2$

2) $\frac{2x}{x-3}+1=\frac{6}{x-3}$

3) $\frac{5x}{3}-\frac{4+x}{2}=\frac{x-2}{4}$

4) $4(3x-2)+6x=8(2x+5)-7$

5) $\frac{1}{w+1}+\frac{2}{y-2}=\frac{1}{y^2-y-2}$

6) $\dfrac{x+1-\dfrac{2}{x}}{1-\dfrac{1}{x}} = x+2$

7) $\dfrac{x-\dfrac{1}{4x}}{\dfrac{1}{x}-2} = x-\dfrac{1}{2}$

8) $\dfrac{x-\dfrac{1}{x}}{1+\dfrac{1}{x}} = -1$

9) $3y+5 = 3-2y$

10) $3t+2(4t-1)+5 = 2-(t+3)-5t$

11) $-4+3(w-1) = w+2(w-2)-1$

12) $4-5(w+2) = 2(w-1)-7w-4$

13) $\dfrac{1}{b-5} - \dfrac{10}{b^2-5b+25} = \dfrac{1}{b+5}$

14) $0.1(w+0.5)+0.2w = 0.2(w-0.4)$

15) $\dfrac{3(n-2)}{5} + \dfrac{2n+3}{6} = \dfrac{4n+1}{9} + 2$

Question (3) : Find four consecutive even integers such that the sum of the first three exceeds the fourth by 8.

Question (4) : Find three consecutive odd integers such that 3 times their sum is 5 more than 8 times the middle one.

Question (5) : If a rectangle has a length that is 3 meters less than four times its width, and its perimeter is 19 meters. What are the dimensions of the rectangle?

Question (6) : Find three consecutive integers such that the second plus three times the first minus twice the third is equal to 15.

Question (7) : Find a number such that 10 less than two-thirds the number is one-fourth the number.

Question (8) : Find a number such that 6 more than one-half the number is two-thirds the number.

Question (9) : Find the perimeter of a triangle if one side is 16 feet, another side is two-sevenths the perimeter, and the third side is one-third the perimeter?

Question (10) : If the width of a rectangle is one-fourth of its length and the perimeter is equal to 20 meter. Find the area of the rectangle.

Question (11) : Is 3 a solution for the equation $3x+4=7-2x$.

Question (12) : Is the solution right or wrong? If wrong, show the correct solution.

(1)
$$\frac{x}{x-3}+4=\frac{2x-3}{x-3}$$
$$4+4x-12=2x-3$$
$$x=3$$

(2)
$$\frac{x^2+1}{x-1}=\frac{x^2+4x-3}{x-1}$$
$$x^2+1=x^2+4x-3$$
$$x=1$$