

Sangam Skm College - Nadi

Year 12

Mathematics

Worksheet 4

1. Solve for x in the following equations:

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

(b) $\log_2 30 = x$

(c) $x^2 = 2x$

2. Simplify the following algebraic expressions:

(a) $\frac{x-2}{12-3x^2}$

(b) $\frac{x^2+2x-8}{x^2-1} \times \frac{x+1}{x+4}$

(c) $\frac{xy-3x+2y-6}{yz-3z-5y+15}$

(d) $\frac{x^2-4x-5}{x^2+2-2}$

3. (a) A polynomial function is $f(x) = x^3 + 8x^2 + 17x + k$.

(i) Find the value of k if $x + 2$ is a factor of $f(x)$

(ii) Hence find the other two factors.

(b) If a polynomial $f(x)$ is divided by $x + 1$, the remainder is:

A. $f(x + 1)$

B. $f(-1)$

C. $f(x - 1)$

D. $f(2)$