

King Fahd University of Petroleum and Minerals
Prep-Year Math Program
Math 001 - Term 071
Recitation hour (P3 & P4)

Question1

Factor each of the following trinomials

a) $x^2 - 5x - 6$

b) $4x^2 + 10x - 15$

c) $x^6 + 7x^3 - 8$

Question2

Factor by grouping:

a) $9x^2 + 3x - y - y^2$

b) $36x^2 - y^2 - 4yz - 4z^2$

c) $4x^3 - 8x^2y - xy^2 + 2y^3$

Question3

Find all positive values of k such that $4x^2 - 12xy + ky^2$ is a perfect-square trinomial.

Question4

Given the polynomial $(2x - 3)^3 - (3x - 2)^2$

a. Write this polynomial in the standard form .

b. Complete the following table:

The leading coefficient is	The constant term is	The coefficient of is x^2

Question6

TRUE or FALSE

1. $4x^2y^2 - 4xy + 1$ is a perfect square trinomial.

2. $x + \sqrt{x}$ is a polynomial.

3. $xy^2 - \frac{1}{2}(xy)^3 + x^2y^3 + 3$ is a polynomial of degree 5

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Question1

Simplify:

$$a) \frac{x}{x-4} - \frac{x^2+6x+9}{x^3+27} \div \frac{x^2+7x+12}{x^3-3x^2+9x}$$

$$b) \frac{xy^{-2} - 4x^{-1}}{y^{-1} - 2x^{-1}}$$

$$c) \frac{x-1 + \frac{2}{x-4}}{x+3 + \frac{6}{x-4}}$$

Question2

Write the number $\frac{(\sqrt{-4})i^{23} - \sqrt[3]{-27}}{1+i^{17}}$ in **standard form**.

Question3

Find the **conjugate** of $z = \frac{\sqrt[3]{-27} - \sqrt{-16}}{\sqrt{-3}\sqrt{-27}}$ and write in standard form.

Question4

TRUE or FALSE ?

1. The expression $(\sqrt{-2} - \sqrt{2})(\sqrt{-2} + \sqrt{2})$ is equal to -4 .

2. The expression $\frac{1}{x^{-1} + y^{-1}}$ is equal to $x - y$.

3. The expression $(x^{-1} + y^{-1})^{-1}$ is equal to $x + y$.

4. The expression $i^{60} + i^{61} + i^{62} + i^{63}$ is equal to 0 .

5. The expression $\left(\frac{1+i}{1-i}\right)^{18}$ is equal to -1 .