product of all common factors with least power

$= a(x + 3)$

a^3+b^3?

EXERCISE 4.3

1.(a) Find the HCF of the following monomials by completing the table.

Monomials	HCF of numerical coefficients	HCF of 'p'	HCF of 'q'	HCF of 'r'	Required HCF
$16p^3q, 9pq^2r$	1	p	q	–	pq
$10p^3q^2r, 5p^2qr, 15p^2qr^2$	5	p^2	q	r	$5p^2qr$
$14p^4qr^4, 28p^3qr^2,$ $7p^2qr^2, 21p^2q^2r^4$	7	p^2	q	r^2	$7p^2qr^2$

(b) If all common factors with least power of three unknown polynomials are 2^2, 3, pq a
$(p+q)^2$ then what would be their HCF?

(c) Write any two polynomials of your choice having HCF as 1.

(d) The only common factor of two polynomials is m – n and the only uncommon facto
m^2+n^2. Can you guess the unknown polynomials?

(e) Can you guess HCF of two polynomials $x^3 + 5x + 1$ and $1 + 5x + x^3$ without any procedure?

by factorization

Math

1-9-2024

Unit 4

Ex 4.3

b) $12^2, 3, pq$ and $(p+q)^2$

$4 \times 3 \times pq(p+q)^2$

$12pq(p+q)^2$

c) My example is $(a+b)^2, (a-b)^2$

$(a+b)(a+b), (a-b)(a-b)$

HCF = 1.

d) let the unknown polyomial are A and B

The give only common factor is = m-n

The give only uncommon factor is = m^2+n^2

Then $A = (m-n)(m^2+n^2)$

$B = (m-n)$

So m^2+n^2 is uncommon.

e) x^3+5x+1 and $1+5x+x^3$

HCF of $x^3+5x+1 = x^3+5x+1$ Ans.

Q2 $(x+y)^2, x^2-y^2$

$(x+y)^2, (x+y)(x-y)$

H.C.F $= (x+y)$ Ans.

Q3 $(a-b)^3, a^2-2ab+b^2$

$(a-b)^3, (a-b)^2$

H.C.F $= (a-b)^2$ Ans

Q4 $a^3b-ab^3, a^5b^2-a^2b^5$

$ab(a^2-b^2), a^2b^2(a^3-b^3)$

$ab(a+b)(a-b), a^2b^2(a-b)(a^2+ab+b^2)$

H.C.F $ab(a-b)$ Ans.

Q5 $x^2-49, x^2-4x-21$

$(x)^2-(7)^2, x^2-7x+3x-21$

$(x+7)(x-7), x(x-7)+3(x-7)$

$(x+7)(x-7), (x-7)(x+3)$

H.C.F $= (x-7)$ Ans.

1 x 21

7 x 3 = 21

12 x 1 = 12

4 x 3 = 12

15 x 1

5 x 3 = 15

Q6 $12x^2+x-1, 15x^2+8x+1$

$12x^2+4x-3x-1, 15x^2+5x+3x+1$

$4x(3x+1)-1(3x+1), 5x(3x+1)+1(3x+1)$

$(3x+1)(4x-1), (3x+1)(5x+1)$

HCF $= (3x+1)$ Ans

Q7 $c^2x^2-d^2$, $acx^2-bcx+adx-bd$

$(cx)^2-(d)^2$, $cx(ax-b)+d(ax-b)$

$(cx+d)(cx-d)$, $(ax-b)(cx+d)$

H.C.F $=(cx+d)$ Ans.

Q8 m^2-n^2, $mA-nA$, $mb-nb$

$(m)^2-(n)^2$, $(m^2)^2-(n^2)^2$, $(m^3)^2-(n^3)^2$

$(m+n)(m-n)$, $(m^2+n^2)(m^2-n^2)$, $(m^3+n^3)(m^3-n^3)$

$(m+n)(m-n)$, $(m^2+n^2)(m+n)(m-n)$, $(m+n)(m^2-mn+n^2)(m-n)(m^2+mn+n^2)$

H.C.F $=(m+n)(m-n)$ Ans.

Q9 $ax^2+2a^2x+a^2$, $2ax^2-4a^2x-6a^3$, $3(ax+a^2)^2$

$a(x^2+2ax+a^2)$ $2a(x^2-2ax-3a^2)$, $3a^2(x+a)^2$

$a(x+a)^2$, $2a(x^2-3ax+1ax-3a^2)$,

$2a[x(x-3a)+a(x-3a)$,

$2a[(x-3a)(x+a)]$,

~~H.C.F $=(x+a)$~~ H.C.F $=a(x+a)$