

Homework 4.1

Key

POLYNOMIAL DIVISION HOMEWORK

Answer the questions, showing all work, on a separate page

Note: Work not shown.

only Copy my answers = no stamp for you

- 1) Find the quotient and remainder, then write the division statement for each polynomial division.

a) $(x^3 + 13x^2 + 39x + 20) \div (x + 9)$
 $x^2 + 4x + 3 - \frac{7}{x+9}$

f) $(x^3 - 10x - 15 + 7x^2) \div (x + 8)$
 $x^2 - x - 2 + \frac{1}{x+8}$

b) $(x^3 - x^2 + 8x + 37) \div (x - 2)$
 $x^2 + x + 10 + \frac{57}{x-2}$

g) $(4n^3 - 13n - 6) \div (2n + 1)$
 $2n^2 - n + 7 - \frac{13}{2n+1}$

c) $(5x^3 + 3x^2 - 5x + 3) \div (x - 1)$
 $5x^2 + 8x + 3 + \frac{6}{x-1}$

h) $(x^3 + 5x^2 - 2x - 24) \div (x^2 + 7x + 12)$
 $x-2$

d) $(-2a^3 - 11a^2 + 7a + 6) \div (a + 6)$
 $-2a^2 + a + 1$

i) $(10a^4 - a^3 + 11a^2 + 7a + 5) \div (5a^2 + 2a - 1)$
 $2a^2 - a + 3 + \frac{8}{5a^2 + 2a - 1}$

e) $(x^3 - 12x - 20) \div (x + 2)$
 $x^2 - 2x - 8 - \frac{4}{x+2}$

j) $(6t^4 + 4t^3 - 13t^2 - 10t - 5) \div (2t^2 - 5)$
 $3t^2 + 2t + 1$

- 2) One factor of $4x^3 + 15x^2 - 31x - 30$ is $x - 2$. Completely factor $4x^3 + 15x^2 - 31x - 30$.

$(x-2)(4x^2 + 23x + 15)$

- 3) Two factors of $12a^4 - 39a^2 + 8a - 8a^3 + 12$ are $a - 2$ and $2a + 1$. Find the other factors.

$(a-2)(2a+1)(3a-2)(2a+3)$

- 4) When $10x^3 + mx^2 - x + 10$ is divided by $5x - 3$, the quotient is $2x^2 + nx - 2$ and the remainder is 4. Find the values for m and n .

$m = -21 \quad n = -3$