## DIVISION of POLYNOMIALS

**Recap:** When we divide monomials, we keep the base then subtract the exponents.

| Ex1.Simplify: $\frac{25x^8}{-5x^3}$ | Ex2. Simplify: $\frac{-32x^3y^4z^5}{-64x^2yz^3}$ |
|---|---|

**Lesson:** When we divide a polynomial by a monomial, we divide each term by the monomial.

| Ex1. Simplify: $\frac{12x^2 - 36x}{3x}$ | Ex2. Simplify: $(15x^3y^2 - 5xy) \div 5xy$ |
|---|---|

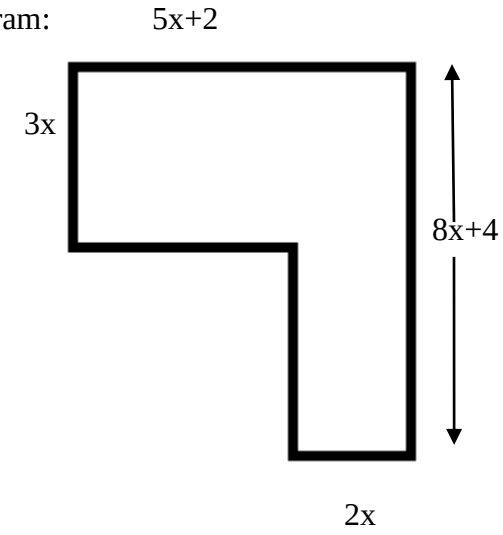
**Simplify the following algebraic expressions:**

| **i)** $(-7x^3 + 6x^2) \div (-x^2)$ | **ii)** $(5b^2 - 10b - 20) \div (-5)$ |
|---|---|
| **iii)** $\frac{5ab + 20ac - 20ad}{5a}$ | **iv)** $\frac{14x^2y^3z - 28x^3y^2z^2 + 35xyz}{7xyz}$ |

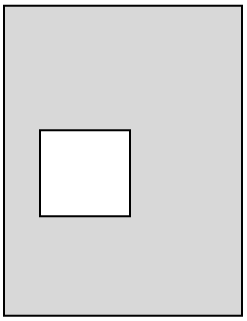
## APPLICATIONS of POLYNOMIALS

1. In an isosceles triangle, two of the sides have length $x^2+3x-8$. The perimeter of the triangle is $4x^2+8x+5$. Find a polynomial to represent the length of the third side.

2. For the shape on the right, find:
   a) The polynomials to represent the missing sides. Label the diagram:
   b) The **perimeter** of the whole shape
   c) The **area** of the whole shape




3. A rectangular backyard has a length of $3x^2-2x+4$ metres and a width of $4x$ metres. The owner has put down stones to create a square sitting area measuring $3x$ metres on all sides.
   a) Calculate the area of the yard that is still grass (has not been covered by stones).



b) Calculate the grass area if x = 2