2. Fill in the blanks :-

i) $4x \times 6x \times 2 = \underline{48x^2}$

ii) $3ab \times 6ax = \underline{18a^2bx}$

iii) $x \times 2x^2 \times 3x^3 = \underline{6x^6}$

iv) $5 \times 5a^3 = \underline{25a^3}$

v) $6 \times 6x^2 \times 6x^2y^2 = \underline{216x^4y^2}$

vi) $-8x \times -3x = \underline{24x^2}$

vii) $-5 \times -3x \times 5x^2 = \underline{75x^3}$

viii) $8x \times -4xy^2 \times 3x^3y^2 = \underline{-96x^4y^4}$

ix) $-4x \times 5xy \times 3z = \underline{-60x^2yz}$

x) $5x \times 2x^2y \times -7y^3 \times 2x^3y^2 = \underline{-140x^6y^6}$

3. Find the value of :

i) $3x^3 \times 5x^4 = \underline{15x^7}$

ii) $5a^2 \times 7a^7 = \underline{35a^9}$

iii) $3abc \times 6ac^3 = \underline{18a^2bc^4}$

iv) $a^2b^2 \times 5a^3b^4 = \underline{5a^5b^6}$

v) $2x^2y^3 \times 5x^3y^4 = \underline{10x^5y^7}$

vi) $abc \times bcd = \underline{ab^2c^2d}$

7) i) $x+2$ and $x+10 = (x+2) \times (x+10)$
$= x(x+2) + 10(x+2) = x^2+2x+10x+20 = x^2+12x+20$

ii) $(x+5)$ and $x-3 = (x+5) \times (x-3) = x(x+5) - 3(x+5)$
$= x^2+5x-3x-15 = x^2+2x-15$

iii) $x-5$ and $x+3 = (x-5) \times (x+3) = x(x-5) + 3(x-5)$
$= x^2-5x+3x-15 = x^2-2x-15$

iv) $x-5$ and $x-3 = (x-5) \times (x-3) = x(x-5) - 3(x-5)$
$= x^2-5x-3x+15 = x^2-8x+15$

v) $2x+y$ and $x+3y = (2x+y) \times (x+3y)$
$= x(2x+y) + 3y(2x+y) = 2x^2+xy+6xy+3y^2$
$= 2x^2+7xy+3y^2$

vi) $3x-5y$ and $x+6y = (3x-5y) \times (x+6y) = x(3x-5y) + 6y(3x-5y)$
$= 3x^2-5xy+18xy-30y^2 = 3x^2+13xy-30y^2$

vii) $x+9y$ and $x-5y = (x+9y) \times (x-5y) = x(x+9y) - 5y(x+9y)$
$= x^2+9xy-5xy-45y^2 = x^2+4xy-45y^2$.

viii) $2x+5y$ and $2x+5y = (2x+5y) \times (2x+5y)$
$= 2x(2x+5y) + 5y(2x+5y) = 4x^2+10xy+10xy+25y^2$
$= 4x^2+20xy+25y^2$.

2. Simplify:

i) $2x^5 \div x^2$

$= \frac{2 \times x \times x \times x \times x \times x}{x \times x}$

$= 2x^3$

ii) $6a^8 \div 3a^3$

$= \frac{6 \times a \times a \times a \times a \times a \times a \times a}{3 \times a \times a \times a}$

$= 2a^5$

iii) $20xy \div -5xy$

$= \frac{20 \times x \times y}{-5 \times x \times y}$

$= -4$

iv) $-24a^2b^2c^2 \div 6ab$

$= \frac{-24 \times a \times a \times b \times b \times c \times c}{6 \times a \times b} = -4abc^2$

v) $-5x^2y \div xy^2$

$= \frac{-5 \times x \times x \times y}{x \times y \times y} = \frac{-5x}{y}$

vi) $40p^3q^4r^5 \div 10p^3q$

$= \frac{40 \times p \times p \times p \times q \times q \times q \times q \times r \times r \times r \times r \times r}{10 \times p \times p \times p \times q} = 4q^3r^5$

vii) $-64x^4y^3z \div 4x^3y^2z$

$= \frac{-64 \times x \times x \times x \times x \times y \times y \times y \times z}{4 \times x \times x \times x \times y \times y \times z} = -16xy$

viii) $35xy^5 \div 7x^2y^4$

$= \frac{35 \times x \times y \times y \times y \times y \times y}{7 \times x \times x \times y \times y \times y \times y} = \frac{5y}{x}$

3. Divide :

i) $-\frac{3m}{4}$ by $2m$

$= \frac{-3m}{4} \times \frac{1}{2m} = -\frac{3}{8}$

ii) $-15p^6q^8$ by $-5p^6q^7$

$= \frac{-15p^6q^8}{-5p^6q^7} = 3p^{6-6}q^{8-7}$

$= 3q$

iii) $-21m^5n^7$ by $14m^2n^2$

$= \frac{-21}{14} m^{5-2} n^{7-2}$

$= -\frac{3}{2} m^3n^5$

iv) $36a^4x^5y^6$ by $4x^2a^3y^2$

$= \frac{36}{4} a^{4-3} x^{5-2} y^{6-2}$

$= 9ax^3y^4$

v) $20x^3a^6 \text{ by } 5xy = \frac{20}{5} x^{3-1} a^6 y = \frac{4x^2a^6}{y}$

vi) $\frac{28a^2b^3}{c^2} \text{ by } 4abc = \frac{28a^2b^3}{c^2} \times \frac{1}{4abc} = \frac{7ab^2}{c^3}$

vii) $\frac{2a^2}{9b^2} \text{ by } \frac{3b}{2a} = \frac{2a^2}{9b^2} \times \frac{2a}{3b} = \frac{4a^3}{27b^3}$

viii) $-\frac{5.5x^2}{y} \text{ by } \frac{11x}{y} = -\frac{5.5x^2}{y} \times \frac{y}{11x} = -\frac{5.5}{11} x = -0.5x$

ix) $\frac{64x^2y^2}{z^2} \text{ by } \frac{8xy}{z} = \frac{64x^2y^2}{z^2} \times \frac{z}{8xy} = \frac{8xy}{z}$

4 Simplify: