

CHAPTER 7

Algebra

Simplifying Algebraic Expressions

Examples :-

Collect Like Terms

$$a + a + a + a = 4a$$

$$12m - 7m = 5m$$

$$5x + y - x + 7y = 4x + 8y \text{ (not } = 12xy)$$

$$14 + 3k - 3 = 11 + 3k \text{ (not } = 14k)$$

$$h^2 + h^2 + h^2 = 3h^2 \text{ (not } h^6)$$

Multiply Terms

$$9 \times p = 9p$$

$$h \times 8 = 8h$$

$$w \times w = w^2 \text{ (not } = 2w)$$

$$5m \times 6m = 30m^2 \text{ (not } 30m)$$

Divide Terms

$$14a \div 2a$$

$$= 14\cancel{a} \div 2\cancel{a}$$

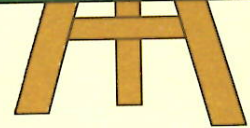
$$= 7$$

$$18p^2 \div 9p$$

$$= 18 \times p \times \cancel{p} \div 9\cancel{p}$$

$$= 2p$$

Be able to collect "like" terms & multiply terms in algebraic expressions



Exercise 1



1. Simplify the following expressions by collecting like terms :-

a $p + p$

d $x - x + x$

g $p + 3p - 2p + p$

j $x + y + 2x$

m $9m - n - 8m + n$

p $9 - 2p + 3p - 9$

s $5g + h - 6g + 3h$

v $20 - k + 11k - 19$

y $x^2 + x^2 + x^2$

b $k + k + k$

e $y + y - y + y$

h $8k + 4k - 10k + k$

k $a + a + b - b$

n $3x + 7x - 1$

q $6 + 5u - 4u$

t $a + 3b - a - 3b$

w $10 - 6w - 1 + 6w + w$

z $p^2 + q^2 - p^2 + q^2$

c $w + w + w + w + w$

f $h + h + h - h - h$

i $6w - 5w - 2w + w$

l $2g + h - g + h$

o $8 + 2a - 3$

r $3p + 8q + 6p - 7q$

u $1 + 2x - x + 3$

x $a + b - a + b + 2a - b$

2. Simplify by multiplying (or dividing) :-

a $8 \times p$

e $12 \times e$

i $6 \times u \times 8$

m $w^2 \times w$

q $3y \times y \times y$

u $8p \div 2p$

y $18x^2 \div 6x$

b $w \times 4$

f $h \times 0.5$

j $8p \times 7$

n $u \times u^2$

r $5g \times 2g \times g$

v $20m \div 2m$

z $30x^2 \div 10x$

c $m \times m$

g $n \times 1.2$

k $12 \times c \times c$

o $a \times 9b$

s $4h^2 \times 5h$

w $18ab \div 9a$

d $d \times d \times d$

h $y \times y \times 5$

l $p \times q \times 3$

p $3p \times 5q$

t $(2q)^2$ i.e. $(2q \times 2q)$

x $10x^2 \div 5x$

