

## Masroor HW: Expanding brackets and factorising $ax^2+bx+c$ where $a=1$

1. Expand and simplify the following expressions (REMEMBER to collect like terms where necessary):

a.  $7(2x + 7)$

b.  $5a(a - 6)$

c.  $6xy(2x - 3y)$

d.  $3x(7x^2 - y)$

e.  $4(2y - 7) - 3(5y - 3)$

2.

a.

i. Write down the highest common factor between  $3y$  and  $12$

ii. Hence factorise  $3y + 12$ :  $( \quad + \quad )$

b.

i. Find the highest common factor between  $12m$  &  $8m^2$

ii. Hence factorise  $12m + 8m^2$ :  $( \quad + \quad )$

c.

i. Find the highest common factor between  $5a^2b$  &  $15ab^2$

ii. Hence factorise  $5a^2b + 15ab^2$ :  $( \quad + \quad )$

3. Expand and simplify the following expressions:

a.  $(x + 7)(x - 3)$

b.  $(2p^2 - 3p)(3p^3 - 5)$

c.  $(x + 3)(x - 3)$

d.  $(a - 7)^2$

e.  $(2x^2 + 1)(5x - 9)$

4. Factorise the following quadratics:

$x^2 - 8x + 7$
$x^2 + 5x - 36$
$x^2 - 16$
$25x^2 - 81$

$(x - 4)(x + 9)$
$(x + 4)(x - 4)$
$(5x - 9)(5x + 9)$
$(x - 7)(x - 1)$

5.

a. Find the square root of  $36x^2$ : \_\_\_\_\_

b. Also find the square root of  $64y^2$ : \_\_\_\_\_

c. Hence factorise  $36x^2 - 64y^2$ : (        ) (        )

