Quick-fire Algebra Revision Sheet

1. Simplifying:

a) b x d x 4
b) f x f x f x f
c) h x h x h x m x m
d) 6x + 2y – 3x + 3y
e) 4a – 3b + a + 5b

2. Expand:

a) a(a + 3)
b) 2b(b + 4)
c) 4y(y – 2)

3. Factorise:

a) $x^2 + 3x$
b) $m^2 - 2m$
c) $3b^2 + 6ab$
d) $2h^2 - 6gh$
e) $3xy^2 - 6xy$

4. Substitution:

a) x = -3 and y = 4
What is the value of: 3x + 2y

b) h = 2 and y = -3
What is the value of: $2h^2 + 3y$

5. Solve:

a) 2x + 4 = 9
b) 3x – 4 = 8
c) 3(x + 2) = 9
d) 3x + 2 = x + 8
e) 2x – 7 = x + 5

Answers:

1. Simplifying:

a) b x d x 4 **= 4bd**
b) f x f x f x f **= f^4**
c) h x h x h x m x m **= h^3m^2**
d) 6x + 2y – 3x + 3y **= 3x + 5y**
e) 4a – 3b + a + 5b **= 5a + 2b**

Tip: Don't forget to use the sign in front of the term.

2. Expand:

a) a(a + 3) **= $a^2 + 3a$**
b) 2b(b + 4) **= $2b^2 + 8b$**
c) 4y(y – 2) **= $4y^2 - 8y$**

3. Factorise:

a) $x^2 + 3x$ **= x(x + 3)**
b) $m^2 - 2m$ **= m(m – 2)**
c) $3b^2 + 6ab$ **= 3b(b + 2a)**
d) $2h^2 - 6gh$ **= 2h(h – 3g)**
e) $3xy^2 - 6xy$ **= 3xy(y – 2)**

4. Substitution:

a) x = -3 and y = 4
What is the value of: 3x + 2y

3 x -3 + 2 x 4
= -9 + 8
= **-1**

b) h = 2 and y = -3
What is the value of: $2h^2 + 3y$

2 x 2^2 + 3 x -3
= 2 x 4 + -9
= 8 + -9 = **-1**

5. Solve:

a) 2x + 4 = 9

-4	2x	5
÷2	x	$^5/_2$ = **2 ½**

b) 3x – 4 = 8

+ 4	3x	12
÷ 3	x	**4**

c) 3(x + 2) = 9 => 3x + 6 = 9

-6	3x	3
÷3	x	**1**

d) 3x + 2 = x + 8

-2	3x	x + 6
-x	2x	6
÷2	x	**3**

e) 2x – 7 = x + 5

+7	2x	x + 12
-x	x	**12**