11:01 | Common Factors

Name: _____ Class: _____

Examples

- Factorising is the opposite of expanding—mentally check.
- Take out the highest common factor.

Factorise.

1 $7a - 21$
$= 7(a - 3)$

2 $4x + 8y$
$= 4(x + 2y)$
(2 is a factor but not the HCF.)

3 $3x^2 - 10x$
$= x(3x - 10)$

4 $-6p + 9$
$= -3(2p - 3)$
(Always take out the negative.)

Exercise

1 Complete the following.

a $6a + 12 = 6(\ldots + 2)$

b $5b - 30 = 5(b - \ldots)$

c $c^2 - 7c = \ldots(c - 7)$

d $12d + 18 = \ldots(2d + \ldots)$

e $2e^2 + 6e = 2e(e + \ldots)$

f $-8f - 6 = -2(4f + \ldots)$

g $5 - 10g = 5(\ldots - 2g)$

h $4h^2 + 8h = \ldots(h + 2)$

i $-p + 8 = \ldots(p - 8)$

2 Factorise.

a $5x + 15$

b $a^2 - 3a$

c $6x - 6$

d $q^2 + 10q$

e $4 - 12k$

f $3x^2 - 12x$

g $4c + 16$

h $16c - 4$

i $9y^2 + 3y$

j $8 - 6h$

k $ab + 7b$

l $14m + 20n$

m $2t^2 + 6t$

n $5x^2 - 15x$

o $r^2 - 8r$

p $25x + 40$

q $16p^2 - 10p$

r $36 + 24y$

s $16 - 8f$

t $6c + 3$

3 Factorise.

a $-6m - 15$

b $-2x^2 + 4x$

c $-c^2 - 3c$

d $-13a + 26$

e $-16k + 8$

f $-3x - x^2$

g $-4t + 18t^2$

h $-12m - 24$

i $-8y^2 + 12y$

j $-20p - 48$

k $-2h - 4$

l $-4c + 7$

Fun Spot 11:01 | Why didn't the piglets listen to their father?

Write the HCF for each expression. Match the letters with the answers below.

A $5x - 20$

B $4x + 6$

C $x^2 - 7x$

E $4x^2 + 12x$

H $12x - 6$

O $-3x - 6$

R $3x^2 + 6x$

S $-8x - 10$

U $4x - 6x^2$

W $4x + 16$

2	4x	x	5	2x	−2	4x		6	4x	4	5	−2

5		2	−3	5	3x	!

11:01 Common Factors

1 a a **b** 6   **c** c **d** 6, 3   **e** 3   **f** 3

  g 1   **h** $4h$ **i** —

2 a $5(x+3)$ **b** $a(a-3)$ **c** $6(x-1)$ **d** $q(q+10)$

  e $4(1-3k)$ **f** $3x(x-4)$ **g** $4(c+4)$ **h** $4(4c-1)$

  i $3y(3y+1)$ **j** $2(4-3h)$ **k** $b(a+7)$ **l** $2(7m+10n)$

  m $2t(t+3)$ **n** $5x(x-3)$ **o** $r(r-8)$ **p** $5(5x+8)$

  q $2p(8p-5)$ **r** $12(3+2y)$ **s** $8(2-f)$ **t** $3(2c+1)$

3 a $-3(2m+5)$ **b** $-2x(x-2)$ **c** $-c(c+3)$ **d** $-13(a-2)$

  e $-8(2k-1)$ **f** $-x(3+x)$ **g** $-2t(2-9t)$ **h** $-12(m+2)$

  i $-4y(2y-3)$ **j** $-4(5p+12)$ **k** $-2(h+2)$ **l** $-(4c-7)$