

11:02 | Grouping in Pairs

Name: _____ Class: _____

Examples



- Pair off the terms, noticing a common factor in each.
- Then look for a common bracket/factor to take out.

Factorise.

$$1 \quad \begin{array}{l} 3d+6 + cd+2c \\ \downarrow \quad \downarrow \\ = 3(d+2) + c(d+2) \\ = (d+2)(3+c) \end{array}$$

$(d+2)$ bracket is common.

$$2 \quad \begin{array}{l} x^2+6x+x+6 \\ = x(x+6) + 1(x+6) \\ = (x+6)(x+1) \end{array}$$

1 is common factor.

$$3 \quad \begin{array}{l} b^2+5b-2b-10 \\ = b(b+5) - 2(b+5) \\ = (b+5)(b-2) \end{array}$$

Be careful of negative.

Exercise

1 Complete the following.

- a $3(x+2) + a(x+2)$
 c $x(x-3) + 2(x-3)$
 e $m(n-4) + 5(n-4)$
 g $t(u+5) + (u+5)$

- b $2(x+1) - b(x+1)$
 d $q(q+5) - 3(q+5)$
 f $y(y-3) - 1(y-3)$
 h $a(5-a) + 3(5-a)$

2 Factorise.

- a $am + 5a + 2m + 10$
 c $9c + 3 + 3cd + d$
 e $x^2 + 3x + 4x + 12$
 g $7m + 14 - mn - 2n$
 i $g^2 + 4g + 7g + 28$
 k $y^2 - 2y + y - 2$
 m $3xy + 9x + 6y + 18$
 o $ab + ac + bd + cd$
 q $c^2 + 6c + c + 6$
 s $m^2 + 8m - 8m - 64$

- b $4y + 12 + by + 3b$
 d $8x - 2 + 4xy - y$
 f $t^2 - 8t + 3t - 24$
 h $5j - 15 - jm + 3m$
 j $k^2 + 5k - 4k - 20$
 l $2c^2 - 2c + 4c - 4$
 n $xy - 3x + 7y - 21$
 p $p^2 + 10p + 10p + 100$
 r $9 - 3h + 15h - 5h^2$
 t $q^2 + 7q - q - 7$

Fun Spot 11:02 | What's the biggest moth in the world?



Factorise each expression, and match its letter with the answer below.

- A $3x - 6$ H $-3x^2 - 6x$ M $-3x + 6$ O $-3x^2 + 6x$ T $-3x - 6$

$3(x-2)$	$-3(x-2)$	$3(x-2)$	$-3(x-2)$	$-3(x-2)$	$-3x(x-2)$	$-3(x+2)$	$-3x(x+2)$		

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1 a	$(x+2)(3+a)$	b	$(x+1)(2-b)$	c	$(x-3)(x+2)$	d	$(q+5)(q-3)$
e	$(n-4)(m+5)$	f	$(y-3)(y-1)$	g	$(u+5)(t+1)$	h	$(5-a)(a+3)$
2 a	$(m+5)(a+2)$	b	$(y+3)(4+b)$	c	$(3c+1)(3+d)$	d	$(2+y)(4x-1)$
e	$(x+3)(x+4)$	f	$(t-8)(t+3)$	g	$(m+2)(7-n)$	h	$(j-3)(5-m)$
i	$(g+4)(g+7)$	j	$(k+5)(k-4)$	k	$(y-2)(y+1)$	l	$(c-1)(2c+4)$
m	$(y+3)(3x+6)$	n	$(y-3)(x+7)$	o	$(b+c)(a+d)$	p	$(p+10)(p+10)$
q	$(c+6)(c+1)$	r	$(3-h)(3+5h)$	s	$(m+8)(m-8)$	t	$(q+7)(q-1)$