Distributivity

Name

‘Do Now’ Tracker

①	Powers and Roots	1	2	3	4
		5	6	7	8
②	Rounding	1	2	3	4
		5	6	7	8
③	Standard Form	1	2	3	4
		5	6	7	8
④	Connected Calculations	1	2	3	4
		5	6	7	8

1

① Use the numbers below to fill in the gaps

0	1	8	17	100

A prime		Power of 2	
A square		Power of 10	
A cube		5^0	

② Round 264.537 to:

i) The nearest hundred

ii) The nearest whole number

iii) 2 decimal places

iv) 2 significant figures

③ Fill in the gaps

Ordinary Number	Standard Form
6000	
	6×10^4
62000	
	6.2×10^3

④ Given that $12\times176 = 2112$, what is:

i) 120×176

ii) 24×176

iii) 2.4×1760

iv) 13×176

2

① Use the numbers below to fill in the gaps

8	12	18	21	23	32	81

A prime		2^5	
A square		2×3^2	
A cube		$2^2\times3$	

② Round 645.372 to:

i) The nearest hundred

ii) The nearest whole number

iii) 2 decimal places

iv) 2 significant figures

③ Fill in the gaps

Ordinary Number	Standard Form
500	
	5.2×10^2
520000	
	2.5×10^5

④ Given that $30\times814 = 24420$, what is:

i) 3×81.4

ii) 6×814

iii) 30×816

iv) 15×814

3

① Use the numbers below to fill in the gaps

1	10	20	25	27	29	50

A prime		10^1	
A square		1^{10}	
A cube		2×5^2	

② Round 595.959 to:

i) The nearest hundred

ii) The nearest whole number

iii) 1 decimal place

iv) The nearest thousand

③ Fill in the gaps

Ordinary Number	Standard Form
300000	
	3.52×10^5
352400	
	3.524×10^3

④ Given that $11\times242 = 2662$, what is:

i) 11×121

ii) 11×24200

iii) 1.1×2.42

iv) 12×242

4

① Use the numbers below to fill in the gaps

8	9	10	11	12	13	14

3^2		$6^2 \div 3$	
2^3		A prime	
$2^2 + 3^2$		$\sqrt{100}$	

② Round 959.595 to:

i) The nearest hundred

ii) The nearest whole number

iii) 1 decimal place

iv) 2 significant figures

③ Fill in the gaps

Ordinary Number	Standard Form
	8×10^3
800	
	8×10^1
8	
	8×10^{-1}

④ Given that $48\times88 = 4224$, what is:

i) 24×88

ii) 8×88

iii) 56×88

iv) $4224 \div 48$

5

① Use the numbers below to fill in the gaps

4	8	9	27	30	100	1000

$\sqrt{64}$		10^3	
$\sqrt[3]{64}$		$\sqrt{81}$	
3^3		8^2+6^2	

② A number has been rounded to the nearest 100, becoming 600.

What could the number have been?

③ Fill in the gaps

Ordinary Number	Standard Form
76	
	7.6×10^0
0.76	
	7.6×10^{-2}

④ Given that $32\times45=1440$, what is:

i) $1440\div45$

ii) $1440\div90$

iii) $1440\div16$

iv) $1495\div45$

6

① Use the numbers below to fill in the gaps

7	8	10	11	18	25	36

$(2+3)^2$		$2+2^3$	
$2+3^2$		$(2\times3)^2$	
2^2+3		2×3^2	

② A number has been rounded two decimal places, becoming 17.23.

What could the number have been?

③ Fill in the gaps

Ordinary Number	Standard Form
8230	
	8.23×10^1
0.823	
	8.23×10^{-3}

④ Given that $49^2=2401$, what is:

i) 49×50

ii) $\sqrt{2401}$

iii) 4.9^2

iv) 7^4

7

① Use the numbers below to fill in the gaps

10	25	27	32	49	50	100

$(2+5)^2$		2×5^2	
$2+5^2$		2^5	
$(2\times5)^2$		5^2	

② A number has been rounded to the nearest 10, becoming 600.

What could the number have been?

③ Fill in the gaps

Not Standard Form	Standard Form
50×10^2	
$40\times10^{\square}$	4×10^6
32×10^9	
$100\times10^{\square}$	1×10^{14}

④ Given that $29\times31=899$, what is:

i) 30×31

ii) 30×29

iii) 28×31

iv) 28×32

8

① Use the numbers below to fill in the gaps

5	6	7	8	11	12	18

$\sqrt{4}\times9$		$\sqrt{49}$	
$\sqrt{4\times9}$		$4\times\sqrt{9}$	
$\sqrt{4}+9$		$\sqrt{4}+\sqrt{9}$	

② A number has been rounded two decimal places, becoming 17.20

What could the number have been?

③ Fill in the gaps

Not Standard Form	Standard Form
0.5×10^4	
$0.4\times10^{\square}$	4×10^6
0.32×10^{11}	
$0.01\times10^{\square}$	1×10^{14}

④ Given that $75\times166=12450$, what is:

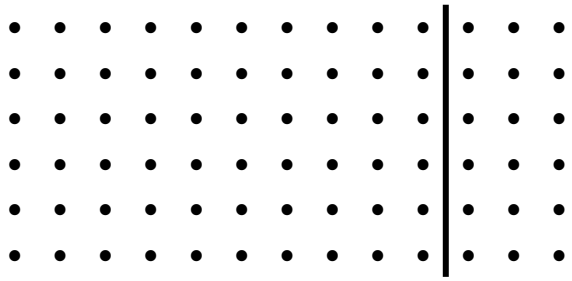
i) $12450\div166$

ii) $12450\div750$

iii) $12450\div83$

iv) 75% of 166

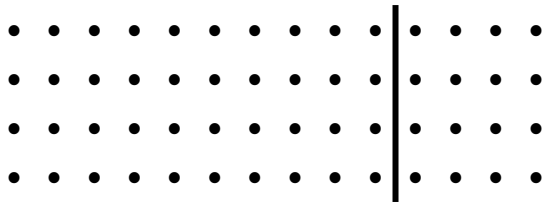
Task 1 Counting Dots



Original:	6×13
Brackets:	$6 \times (10 + 3)$
Expanded:	$6 \times 10 + 6 \times 3$
Result:	$60 + 18 = 78$

Grid:

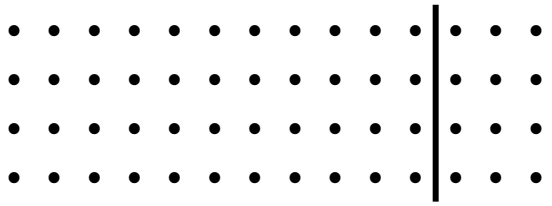
×	10	3
6	60	18



Original:	×
Brackets:	× (+)
Expanded:	× + ×
Result:	+ = 56

Grid:

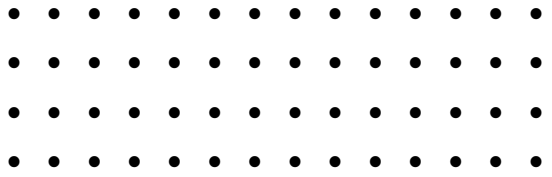
×		



Original:	
Brackets:	
Expanded:	
Result:	= 56

Grid:

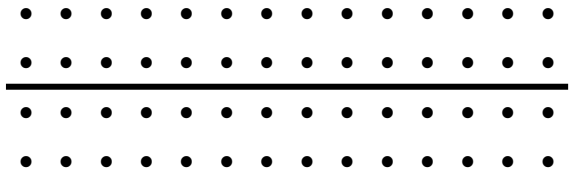
×		



Original:	
Brackets:	$4 \times (5 + 9)$
Expanded:	
Result:	

Grid:

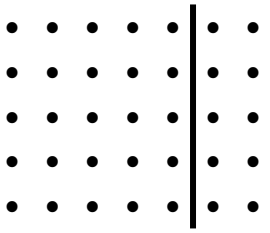
×		



Original:	
Brackets:	$(2 + 2) \times 14$
Expanded:	
Result:	

Grid:

×		



×		

Result:

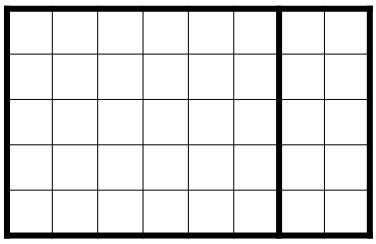
×	2	6
3		

Result:

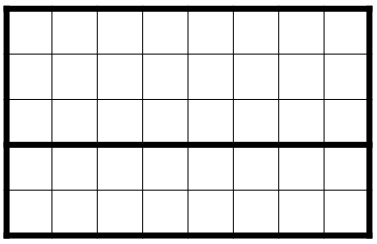
×	3
4	
1	

×	5	1
2		
3		

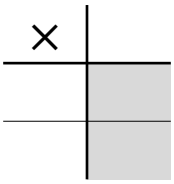
Task 2 Calculating Areas

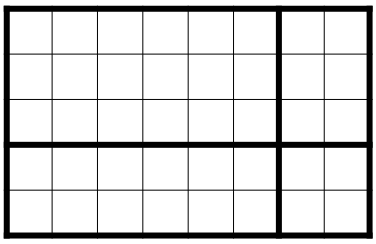


Original:	×
Brackets:	× ( )
Result:	

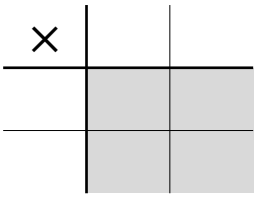


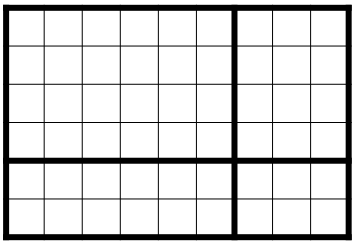
Original:	
Brackets:	
Result:	



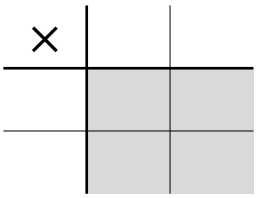


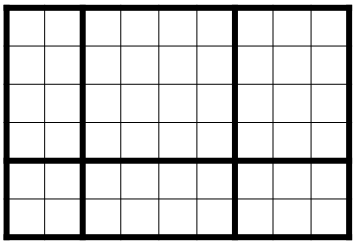
Original:	
Brackets:	
Result:	



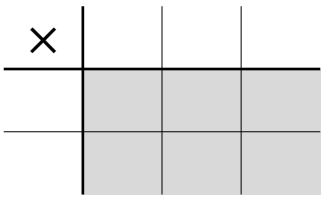


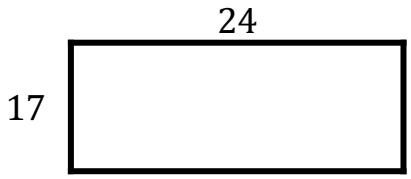
Original:	
Brackets:	
Result:	



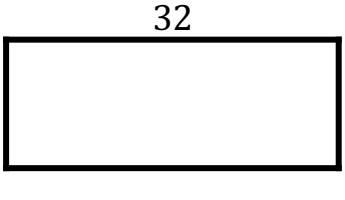


Original:	
Brackets:	
Result:	

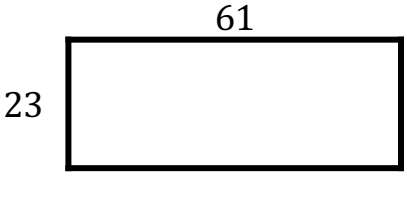




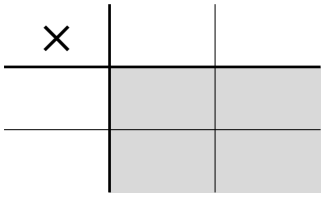
Original:	
Brackets:	$(10+7)(20+4)$
Result:	

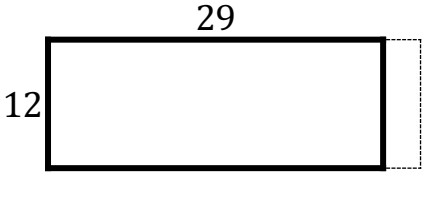


Original:	
Brackets:	
Result:	

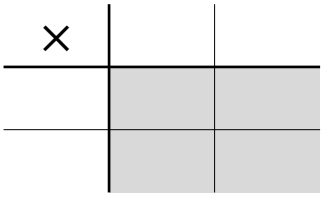


Original:	
Brackets:	
Result:	





Original:	
Brackets:	$(10+2)(30-1)$
Result:	



Task 3 Calculations with Negatives

Original: 8×5

Brackets: $(3+5)(1+4)$

$\times$	1	$+4$
3		
$+5$		

$$\begin{aligned} & 3 \\ + \; & 12 \\ + \; & 5 \\ + \; & 20 \\ = \; & \mathbf{40} \end{aligned}$$

Original: 8×5

Brackets: $(3+5)(6-1)$

$\times$	6	-1
3		
$+5$		

$$\begin{aligned} & 18 \\ + \; & 30 \\ - \; & 3 \\ - \; & 5 \\ = \; & \mathbf{40} \end{aligned}$$

Original:

Brackets:

$\times$	2	$+3$
10		
-2		

$= \mathbf{40}$

Original:

Brackets:

$\times$	5	$+4$
10		
-3		

$=$

Original:

Brackets: $(4+3)(10-1)$

$\times$		

$=$

Original:

Brackets:

$\times$	10	-1
10		
-3		

$=$

Original:

Brackets: $(5-2)(7-1)$

$\times$		

$=$

Original:

Brackets: $(100-1)(100+1)$

$\times$		

$=$

Original: 98×102

Brackets:

$\times$		

$=$

Original: 303×99

Brackets:

$\times$		

$=$

Original: 39×18

Brackets:

$\times$		

$=$

Original:

Brackets:

$\times$	10	3
		90
	-20	

$=$

Original:

Brackets:

$\times$	5	
	20	8
		6

$=$

Original:

Brackets:

$\times$		
	40	-5
	16	-2

$=$

Original:

Brackets:

$\times$		
	200	-60
	-10	3

$=$

Task 4 Fill in the gaps and group the grids that show the same overall calculation

A

×	11	−1
8		

B

×	14	
	140	−20

C

×		
	108	−12

D

×	
	112

E

×	11	+1	−2
	132		

F

×	11		
		8	16

G

×	8
14	
	−16

H

×	8
14	
	−32

I

×	10	+2
10		
−2		

J

×	15	−1
15		
−7		

K

×	20	
		−160
−10		80

L

×	11	−3	
10			20
			−4

Group 1

$\mathbf{10 \times 8}$		

Group 2

$\mathbf{10 \times 12}$		

Group 3

C		

Group 4

D		

Task 5 Complete this grid in as many ways as possible, writing the calculation each time.

×	6	9
10	60	90

$10(6 + 9) = 150$

×		
3	60	90

3(

×		
	60	90

×		
	60	90

×		
	60	90

×		
	60	90

×		
	60	90

×		
	60	90

Task 6 Complete this grid in as many ways as possible, writing the calculation each time.

×	40	−20	8
5	200	−100	40

$5 \times 28 = 140$

×			
	200	−100	40

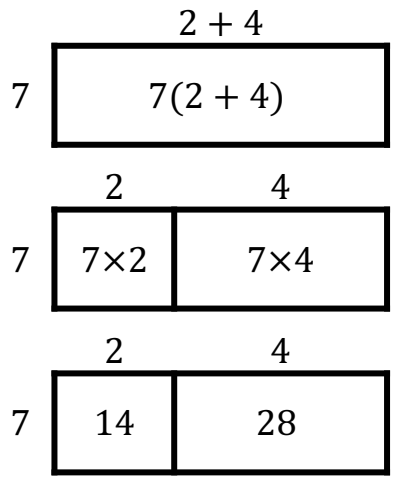
×			
	200	−100	40

×			
	200	−100	40

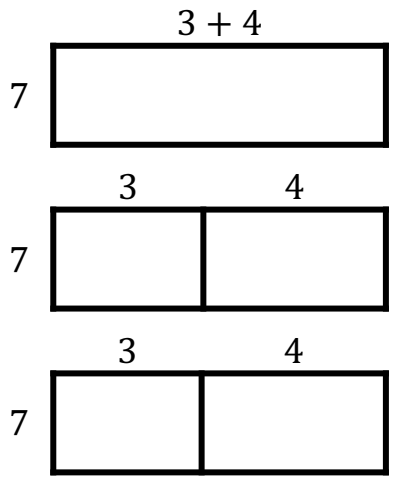
×			
	200	−100	40

×			
	200	−100	40

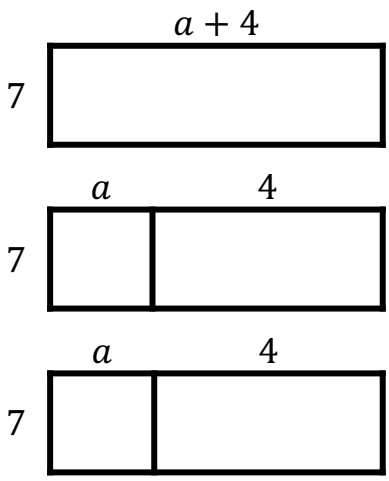
Task 7 Introducing algebra



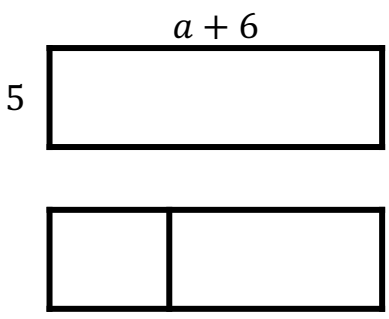
$7(2+4) = 14 + 28$



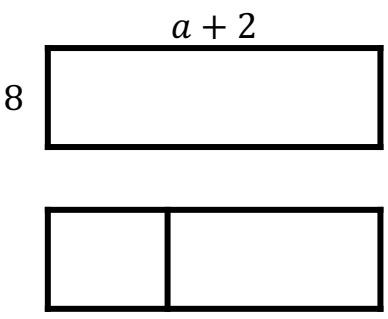
$7(\square + \square) = \square + \square$



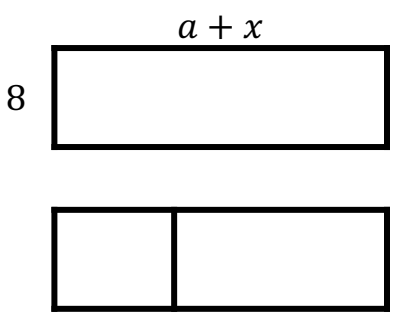
$7(a+4) =$



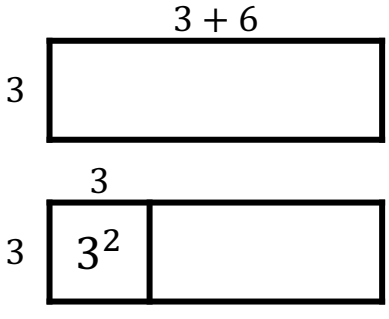
$5(a+6) =$



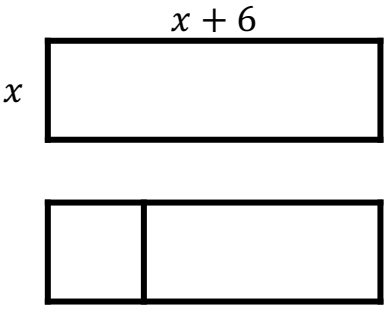
$8(a+2) =$



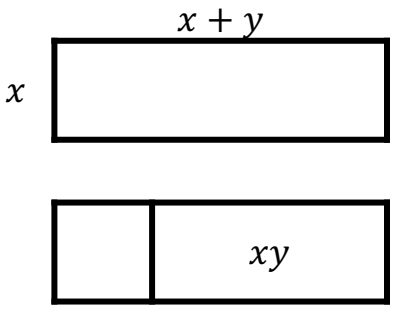
$8(a+x) =$



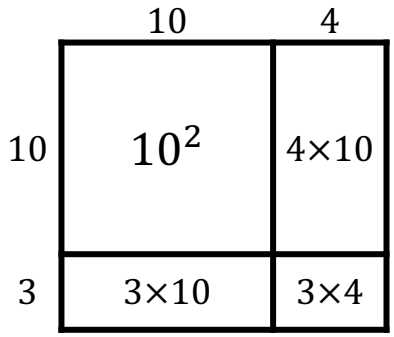
$3(3+6) =$

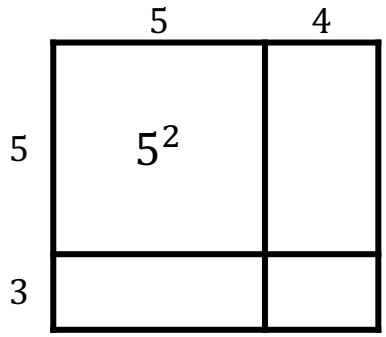


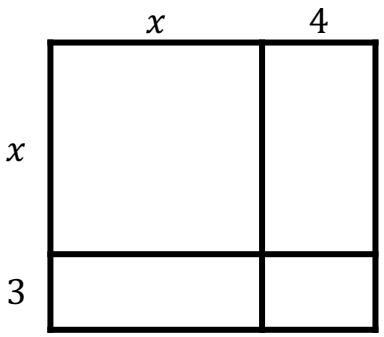
$x(x+6) =$



$x(x+y) =$







Task 8 Introducing Algebra

Brackets:	$3(10+4)$	$3(x+4)$	$5(x+2)$	$6(x-3)$
Grid:	× | 10 | 4 3 | 30 | 12	× | x | 4 3 | $3x$ | 12	× | | | |	× | | | |
Expanded:	$30+12$	$3x+12$		

Brackets:	$3(20+4)$	$3(2x+4)$	$5(3x+2)$	$6(4x-3)$
Grid:	× | 20 | 4 3 | 60 | 12	× | | | $6x$ |	× | | | |	× | | | |
Expanded:	$60+12$			

Brackets:				
Grid:	× | | 4 | $8x$ | -12	× | | | $10x$ | 45	× | | | |	× | 5 | $-2x$ | 20 |
Expanded:			$6x-9$	

Brackets:	$x(x+3)$	$x(x-5)$	$x(x+11)$	
Grid:	× | x | 3 x | x^2 | $3x$	× | | | |	× | | | |	× | | | |
Expanded:	x^2+3x			x^2-6x

Brackets:	$(10+3)(10+2)$	$(x+3)(x+2)$	$(x+3)(x+4)$	$(x+6)(x+2)$
Grid:	× | 10 | 2 10 | 100 | 20 3 | 30 | 6	× | x | 2 x | x^2 | $2x$ 3 | $3x$ | 6	× | | | | | |	× | | | | | |
Expanded:	$100+20+30+6$	$x^2+\mathbf{2x}+\mathbf{3x}+6$		
Simplified:	$100+\mathbf{50}+6$	$x^2+\mathbf{5x}+6$		

Task 9 Expanding Single Brackets – Match them up!

A	$4(x+3)$	**B**	$4(2x+3)$	**C**	$x(x+4)$	**D**	$x(3x+4)$	**E**	$4(2x+y)$
F	$4(x-3)$	**G**	$4(2x-3)$	**H**	$x(x-4)$	**I**		**J**	$4(2x-y)$
K	$4(3-x)$	**L**	$4(3-2x)$	**M**	$x(4-x)$	**N**	$x(4-3x)$	**O**	

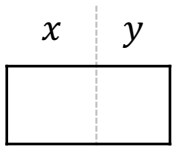
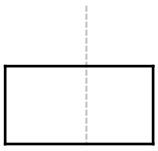
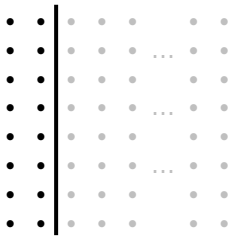
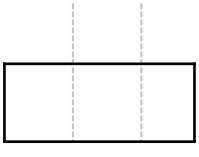
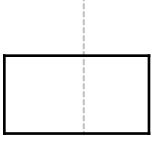
	$4x - x^2$
A	$4x + 12$
	$12 - 4x$
	$8x + 12$
G	

	$4x - 12$
I	$3x^2 - 4x$
	$4x - 3x^2$
	$x^2 + 4x$
H	

	$8x - 4y$
O	$8x - 2y$
	$12 - 4x$
	$8x + 4y$
	$3x^2 + 4x$

Task 10 Fill in the blanks

	$7(x+y)=70$	$5(x+y)=35$	$8(x-y)=16$	$3(2x+y)=45$	$x(y+3)=88$
When $x = 8$, y is equal to...					
When $x = 2$, y is equal to...					
When $x = 11$, y is equal to...					
When $x =$ ___ , y is equal to...	14				
When $x =$ ___ , y is equal to...		6			
When $x =$ ___ , y is equal to...				8	
When x is odd, y is...					
When x is even, y is...					
An equation linking x and y is...					

$7(x+y)=70$	$5(x+y)=35$	$8(x-y)=16$	$3(2x+y)=45$	$x(y+3)=88$
				

Task 11 Introducing Algebra – Double Brackets

Brackets:	$(x+5)(x+2)$	$(x+5)(x-2)$	$(x-5)(x+2)$	$(x-5)(x-2)$
Grid:	× | | | | | |	× | | | | | |	× | | | | | |	× | | | | | |
Expanded:				
Simplified:				

Brackets:	$(x+2)(x-2)$	$(x+5)(x-5)$		
Grid:	× | | | | | |	× | | | | | |	× | | | | | |	× | | | | | |
Expanded:				
Simplified:			x^2-9	x^2-100

Brackets:	$(x+2)^2$	$(x-2)^2$	$(x+5)^2$	
Grid:	× | x | 2 x | | 2 | |	× | | | | | |	× | | | | | |	× | | | | | |
Expanded:				
Simplified:				$x^2-10x+25$

Brackets:				
Grid:	× | x | 4 | | $4x$ | | -8	× | | -3 | x^2 | $-3x$ | $5x$ |	× | | | x^2 | $-6x$ | $2x$ | -12	× | | | | | |
Expanded:				
Simplified:				$x^2+9x+14$

Task 12 Expanding Double Brackets Practice – Match them up!

A: $(x+20)(x-6)$	**B:** $(x+20)(x+6)$	**C:** $(x+6)(x-4)$	**D:** $(x-6)(x+4)$
E: $(x+6)(x+8)$	**F:** $(x-8)(x+6)$	**G:** $(x+8)(x-6)$	**H:** $(x+10)(x+12)$
I: $(x-4)(x+30)$	**J:** $(x+24)(x+2)$	**K:** $(x+24)(x-2)$	**L:** $(x-10)(x+12)$

	$x^2+14x+48$
A	$x^2+14x-120$
	$x^2+2x-24$
	$x^2+2x-48$

	$x^2+26x+48$
	$x^2+2x-120$
	$x^2-2x-24$
	$x^2-2x-48$

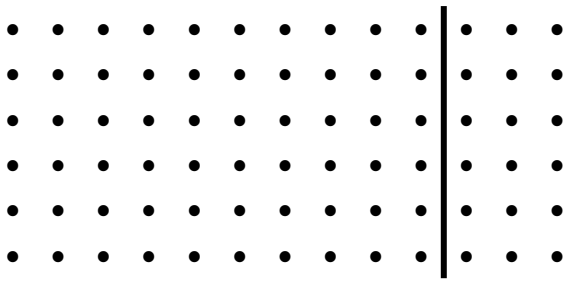
	$x^2+26x+120$
	$x^2+26x-120$
	$x^2+22x+120$
	$x^2+22x-48$

Task 13 Expanding Double Brackets - Variation Grids

$(x+14)(x+1)$	$x(x+15)$	$(x+16)(x-1)$	$(x+17)(x-2)$	$(x+18)(x-3)$
$x^2+15x+14$				
$x(x+6)$	$(x+7)(x-1)$	$(x+8)(x-2)$	$(x+9)(x-3)$	
$(x+2)(x-2)$	$(x+3)(x-3)$	$(x+4)(x-4)$		
$x(x-6)$	$(x+1)(x-7)$			
$(x-1)(x-14)$				

$(x+4)(x+3)$	$(x+3)^2$	$(x+2)(x+3)$	$(x+1)(x+3)$	$x(x+3)$
$(x+4)(x-3)$	$(x+3)(x-3)$	$(x+2)(x-3)$		
$(x-4)(x+3)$	$(x-3)(x+3)$			
$(x-4)(x-3)$				

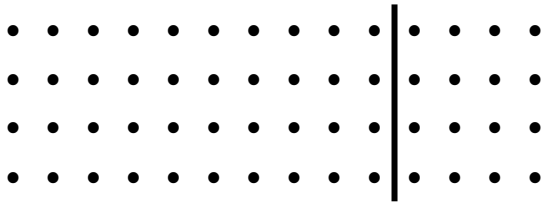
Task 1 Counting Dots



Original:	6×13
Brackets:	$6 \times (10 + 3)$
Expanded:	$6{\times}10 + 6{\times}3$
Result:	$60 + 18 = 78$

Grid:

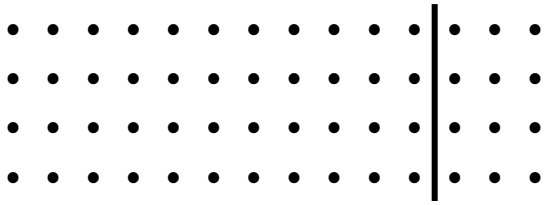
×	10	3
6	60	18



Original:	4×14
Brackets:	$4 \times (10 + 4)$
Expanded:	$4{\times}10 + 4{\times}4$
Result:	$40 + 16 = 56$

Grid:

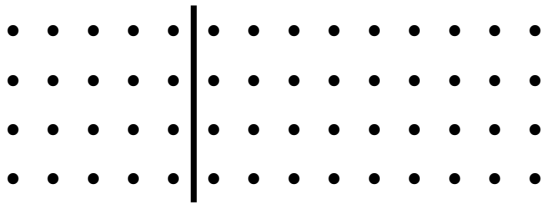
×	10	4
4	40	16



Original:	4×14
Brackets:	$4 \times (11 + 3)$
Expanded:	$4{\times}11 + 4{\times}3$
Result:	$44 + 12 = 56$

Grid:

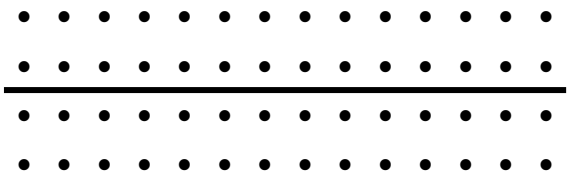
×	11	3
4	44	12



Original:	4×14
Brackets:	$4 \times (5 + 9)$
Expanded:	$4{\times}5 + 4{\times}9$
Result:	$20 + 36 = 56$

Grid:

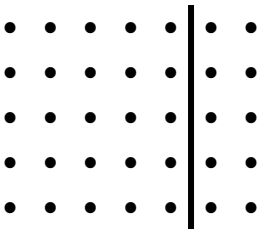
×	5	9
4	20	36



Original:	4×14
Brackets:	$(2 + 2) \times 14$
Expanded:	$2{\times}14 + 2{\times}14$
Result:	$28 + 28 = 56$

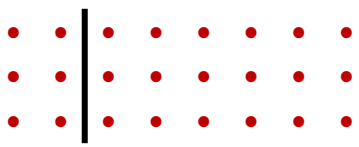
Grid:

×	14
2	28
2	28



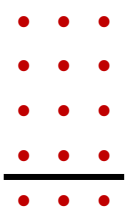
×	4	2
5	20	10

Result: 30

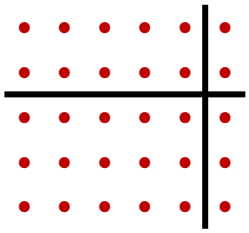


×	2	6
3	6	18

Result: 24

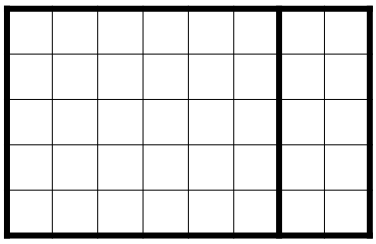


×	3
4	12
1	3



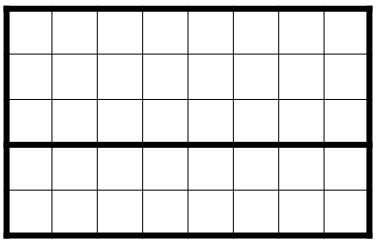
×	5	1
2	10	2
3	15	3

Task 2 Calculating Areas



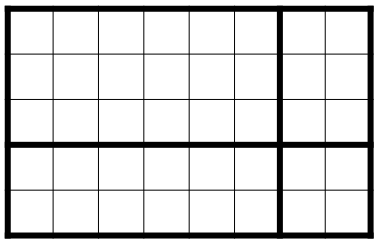
Original:	5×8
Brackets:	$5\times(6+2)$
Result:	$30+10=40$

×	6	2
5	30	10



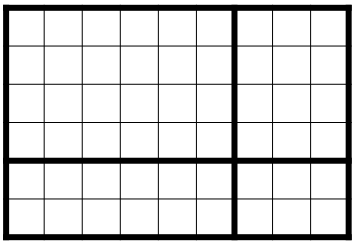
Original:	5×8
Brackets:	$(3+2)\times8$
Result:	$24+16=40$

×	8
3	24
2	16



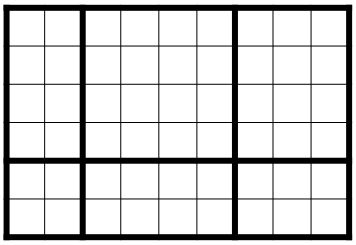
Original:	5×8
Brackets:	$(3+2)(6+2)$
Result:	$18+12+6+4=40$

×	6	2
3	18	6
2	12	4



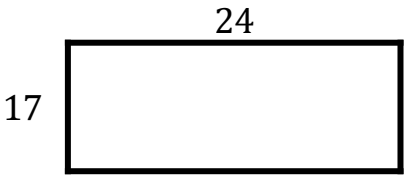
Original:	6×9
Brackets:	$(4+2)(6+3)$
Result:	54

×	6	3
4	24	12
2	12	6



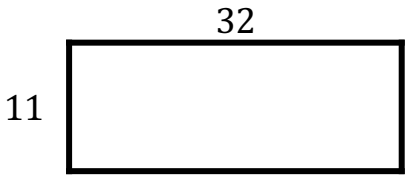
Original:	6×9
Brackets:	$(4+2)(2+4+3)$
Result:	54

×	2	4	3
4	8	16	12
2	4	8	6



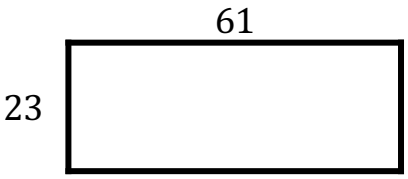
Original:	17×24
Brackets:	$(10+7)(20+4)$
Result:	408

×	20	4
10	200	40
7	140	28



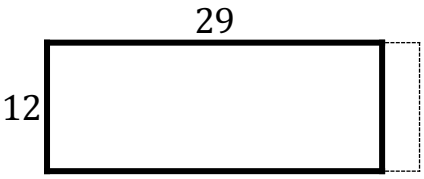
Original:	11×32
Brackets:	$(10+1)(30+2)$
Result:	352

×	30	2
10	300	20
1	30	2



Original:	23×61
Brackets:	$(20+3)(60+1)$
Result:	1403

×	60	1
20	1200	20
3	180	3



Original:	12×29
Brackets:	$(10+2)(30-1)$
Result:	348

×	30	−1
10	300	−10
2	60	−2

Task 3 Calculations with Negatives

Original: 8×5

Brackets: $(3+5)(1+4)$

×	1	+4
3	3	12
+5	5	20

$3 + 12 + 5 + 20 = 40$

Original: 8×5

Brackets: $(3+5)(6-1)$

×	6	−1
3	18	−3
+5	30	−5

$18 + 30 - 3 - 5 = 40$

Original: 8×5

Brackets: $(10-2)(2+3)$

×	2	+3
10	20	30
−2	−4	−6

$20 + 30 - 4 - 6 = 40$

Original: 7×9

Brackets: $(10-3)(5+4)$

×	5	+4
10	50	40
−3	−15	−12

$50 + 40 - 15 - 12 = 63$

Original: 7×9

Brackets: $(4+3)(10-1)$

×	10	−1
4	40	−4
+3	30	−3

$40 + 30 - 4 - 3 = 63$

Original: 7×9

Brackets: $(10-3)(10-1)$

×	10	−1
10	100	−10
−3	−30	3

$100 - 10 - 30 + 3 = 63$

Original: 3×6

Brackets: $(5-2)(7-1)$

×	7	−1
5	35	−5
−2	−14	2

$35 - 5 - 14 + 2 = 18$

Original: 99×101

Brackets: $(100-1)(100+1)$

×	100	1
100	10000	100
−1	−100	−1

$10000 + 100 - 100 - 1 = 9999$

Original: 98×102

Brackets: $(100-2)(100+2)$

×	100	2
100	10000	200
−2	−200	−4

$10000 + 200 - 200 - 4 = 9996$

Original: 303×99

Brackets: $(300+3)(100-1)$

×	100	−1
300	30000	−300
3	300	−3

$30000 + 300 - 300 - 3 = 29997$

Original: 39×18

Brackets: $(40-1)(20-2)$

×	20	−2
40	800	−80
−1	−20	2

$800 - 80 - 20 + 2 = 702$

Original: 28×13

Brackets: $(30-2)(10+3)$

×	10	3
30	300	90
−2	−20	−6

$300 + 90 - 20 - 6 = 364$

Original: 7×7

Brackets: $(4+3)(5+2)$

×	5	2
4	20	8
3	15	6

$20 + 15 + 8 + 6 = 49$

Original: 7×7

Brackets: $(5+2)(8-1)$

×	8	−1
5	40	−5
2	16	−2

$40 + 16 - 5 - 2 = 49$

Original: 19×7

Brackets: $(20-1)(10-3)$

×	10	−3
20	200	−60
−1	−10	3

$200 - 60 - 10 + 3 = 133$

Task 4 Fill in the gaps and group the grids that show the same overall calculation

A

×	11	−1
8	88	−8

B

×	14	−2
10	140	−20

C

×	9	−1
12	108	−12

D

×	8
14	112

E

×	11	+1	−2
12	132	+12	−24

F

×	11	1	2
8	88	8	16

G

×	8
14	112
−2	−16

H

×	8
14	112
−4	−32

I

×	10	+2
10	100	20
−2	−20	−4

J

×	15	−1
15	225	−15
−7	−105	7

K

×	20	−8
20	400	−160
−10	−200	80

L

×	11	−3	2
10	110	−30	20
−2	−22	6	−4

Group 1

10×8		
A	H	L

Group 2

10×12		
B	E	K

Group 3

12×8		
C	G	I

Group 4

8×14		
D	F	J

Task 5 Complete this grid in as many ways as possible, writing the calculation each time.

×	6	9
10	60	90

$10(6 + 9) = 150$

×	20	30
3	60	90

$3(20 + 30) = 150$

×	30	60
2	60	90

$2(30 + 60) = 150$

×	12	18
5	60	90

$5(12 + 18) = 150$

×	4	6
15	60	90

$15(4 + 6) = 150$

×	2	3
30	60	90

$30(2 + 3) = 150$

×	10	15
6	60	90

$6(10 + 15) = 150$

×	60	90
1	60	90

$1(60 + 90) = 150$

Task 6 Complete this grid in as many ways as possible, writing the calculation each time.

×	40	−20	8
5	200	−100	40

$5 \times 28 = 140$

×	100	−50	20
2	200	−100	40

$2 \times 70 = 140$

×	50	−25	10
4	200	−100	40

$4 \times 35 = 140$

×	20	−10	4
10	200	−100	40

$10 \times 14 = 140$

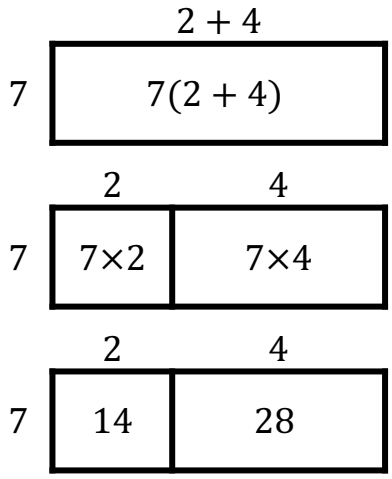
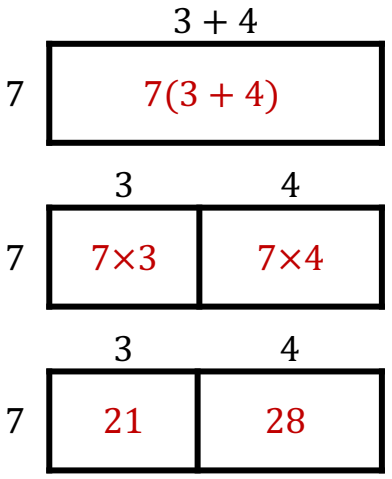
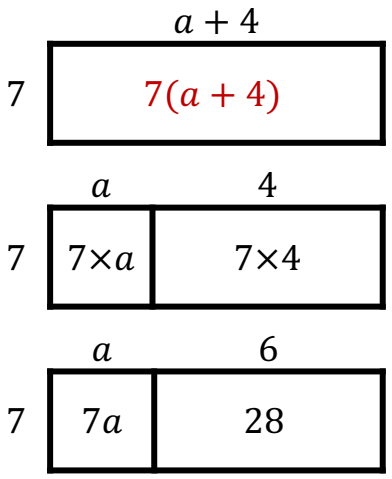
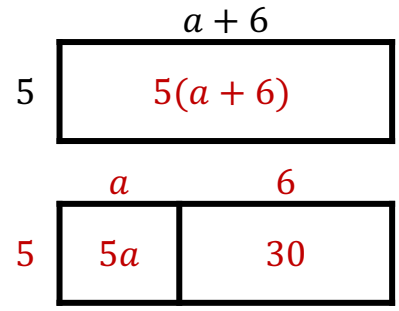
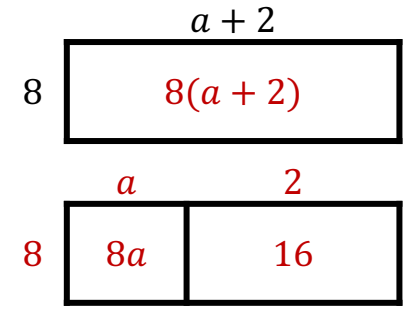
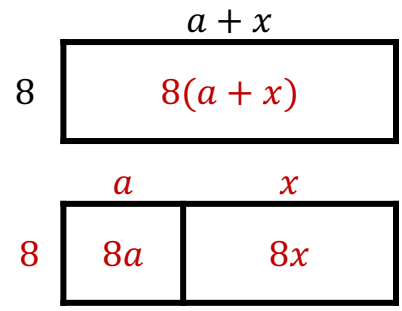
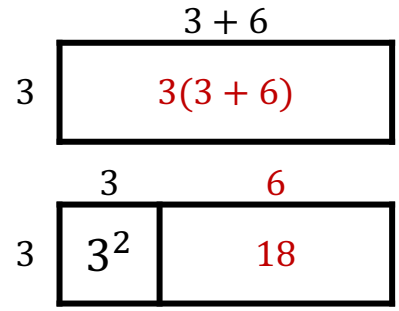
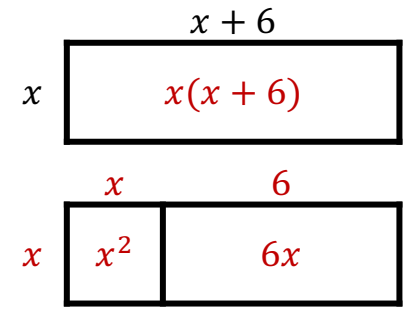
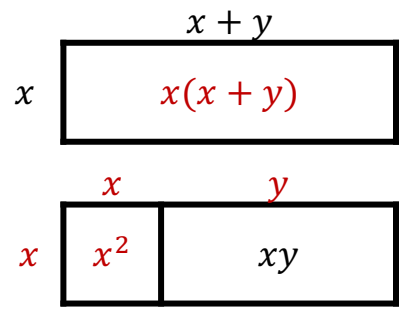
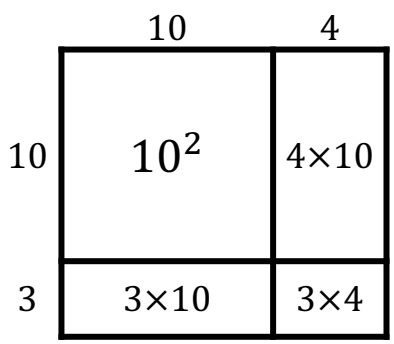
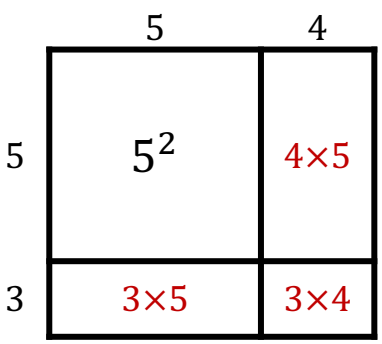
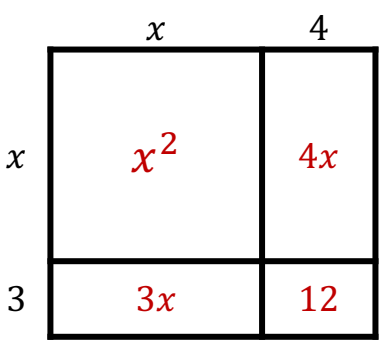
×	10	−5	2
20	200	−100	40

$20 \times 7 = 140$

×	200	−100	40
1	200	−100	40

$1 \times 140 = 140$

Task 7 Introducing algebra

 $7(2+4) = 14 + 28$	 $7(3+4) = 21 + 28$	 $7(a+4) = 7a + 28$
 $5(a+6) = 5a + 30$	 $8(a+2) = 8a + 16$	 $8(a+x) = 8a + 8x$
 $3(3+6) = 3^2 + 18$	 $x(x+6) = x^2 + 6x$	 $x(x+y) = x^2 + xy$
		

Task 8 Introducing Algebra

Brackets:	$3(10+4)$	$3(x+4)$	$5(x+2)$	$6(x-3)$
Grid:	× | 10 | 4 3 | 30 | 12	× | x | 4 3 | $3x$ | 12	× | x | 2 5 | $5x$ | 10	× | x | -3 6 | $6x$ | -18
Expanded:	$30+12$	$3x+12$	$5x+10$	$6x-18$

Brackets:	$3(20+4)$	$3(2x+4)$	$5(3x+2)$	$6(4x-3)$
Grid:	× | 20 | 4 3 | 60 | 12	× | $2x$ | 4 3 | $6x$ | 12	× | $3x$ | 2 5 | $15x$ | 10	× | $4x$ | -3 6 | $24x$ | -18
Expanded:	$60+12$	$6x+12$	$15x+10$	$24x-18$

Brackets:	$4(2x-3)$	$5(2x+9)$	$3(2x-3)$	$4(5-2x)$
Grid:	× | $2x$ | -3 4 | $8x$ | -12	× | $2x$ | 9 5 | $10x$ | 45	× | $2x$ | -3 3 | $6x$ | -9	× | 5 | $-2x$ 4 | 20 | $-8x$
Expanded:	$8x-12$	$10x+45$	$6x-9$	$20-8x$

Brackets:	$x(x+3)$	$x(x-5)$	$x(x+11)$	$x(x-6)$
Grid:	× | x | 3 x | x^2 | $3x$	× | x | -5 x | x^2 | $-5x$	× | x | 11 x | x^2 | $11x$	× | x | -6 x | x^2 | $-6x$
Expanded:	x^2+3x	x^2-5x	x^2+11x	x^2-6x

Brackets:	$(10+3)(10+2)$	$(x+3)(x+2)$	$(x+3)(x+4)$	$(x+6)(x+2)$
Grid:	× | 10 | 2 10 | 100 | 20 3 | 30 | 6	× | x | 2 x | x^2 | $2x$ 3 | $3x$ | 6	× | x | 4 x | x^2 | $4x$ 3 | $3x$ | 12	× | x | 2 x | x^2 | $2x$ 6 | $6x$ | 12
Expanded: Simplified:	$100+20+30+6$ = $100+\mathbf{50}+6$	$x^2+\mathbf{2x}+\mathbf{3x}+6$ = $x^2+\mathbf{5x}+6$	$x^2+\mathbf{3x}+\mathbf{4x}+12$ = $x^2+\mathbf{7x}+12$	$x^2+\mathbf{6x}+\mathbf{2x}+12$ = $x^2+\mathbf{8x}+12$

Task 9 Expanding Single Brackets – Match them up!

A	$4(x+3)$	**B**	$4(2x+3)$	**C**	$x(x+4)$	**D**	$x(3x+4)$	**E**	$4(2x+y)$
F	$4(x-3)$	**G**	$4(2x-3)$	**H**	$x(x-4)$	**I**		**J**	$4(2x-y)$
K	$4(3-x)$	**L**	$4(3-2x)$	**M**	$x(4-x)$	**N**	$x(4-3x)$	**O**	

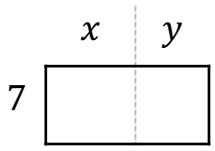
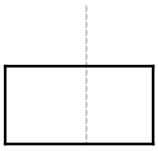
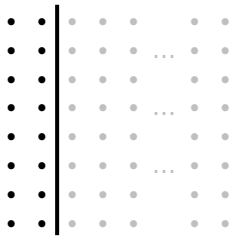
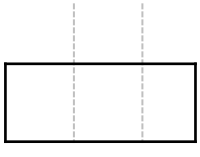
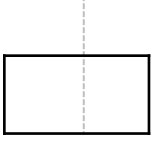
M	$4x-x^2$
A	$4x+12$
K	$12-4x$
B	$8x+12$
G	$8x-12$

F	$4x-12$
I	$3x^2-4x$
N	$4x-3x^2$
C	x^2+4x
H	x^2-4x

J	$8x-4y$
O	$8x-2y$
K	$12-4x$
E	$8x+4y$
D	$3x^2+4x$

Task 10 Fill in the blanks

	$7(x+y)=70$	$5(x+y)=35$	$8(x-y)=16$	$3(2x+y)=45$	$x(y+3)=88$
When $x=8$, y is equal to...	2	-1	6	-1	8
When $x=2$, y is equal to...	8	5	0	11	41
When $x=11$, y is equal to...	-1	-4	9	-7	5
When $x=-4$, y is equal to...	14	11	-6	17	-25
When $x=1$, y is equal to...	9	6	-1	7	85
When $x=0.5$, y is equal to...	9.5	6.5	-1.5	8	174
When x is odd, y is...	odd	even	odd	odd	
When x is even, y is...	even	odd	even	odd	
An equation linking x and y is...	$x+y=10$	$x+y=7$	$x-y=2$	$2x+y=9$	

$7(x+y)=70$	$5(x+y)=35$	$8(x-y)=16$	$3(2x+y)=45$	$x(y+3)=88$
				

Task 11 Introducing Algebra – Double Brackets

Brackets:	$(x+5)(x+2)$	$(x+5)(x-2)$	$(x-5)(x+2)$	$(x-5)(x-2)$
Grid:	× | x | 2 x | x^2 | $2x$ 5 | $5x$ | 10	× | x | -2 x | x^2 | $-2x$ 5 | $5x$ | -10	× | x | 2 x | x^2 | $2x$ -5 | $-5x$ | -10	× | x | -2 x | x^2 | $-2x$ -5 | $-5x$ | 10
Expanded:	$x^2+5x+2x+10$	$x^2+5x-2x+10$	$x^2-5x+2x-10$	$x^2-5x-2x+10$
Simplified:	$x^2+7x+10$	$x^2+3x-10$	$x^2-3x+10$	$x^2-7x+10$

Brackets:	$(x+2)(x-2)$	$(x+5)(x-5)$	$(x+3)(x-3)$	$(x+3)(x-3)$
Grid:	× | x | -2 x | x^2 | $-2x$ 2 | $2x$ | -4	× | x | -5 x | x^2 | $-5x$ 5 | $5x$ | -25	× | x | -3 x | x^2 | $-3x$ 3 | $3x$ | -9	× | x | -10 x | x^2 | $-10x$ 10 | $10x$ | -100
Expanded:	$x^2+2x-2x-4$	$x^2+5x-5x+10$		
Simplified:	x^2-4	x^2-25	x^2-9	x^2-100

Brackets:	$(x+2)^2$	$(x-2)^2$	$(x+5)^2$	$(x-5)^2$
Grid:	× | x | 2 x | x^2 | $2x$ 2 | $2x$ | 4	× | x | -2 x | x^2 | $-2x$ -2 | $-2x$ | 4	× | x | 5 x | x^2 | $5x$ 5 | $5x$ | 25	× | x | -5 x | x^2 | $-5x$ -5 | $-5x$ | 25
Expanded:	$x^2+2x+2x+4$	$x^2-2x-2x+4$	$x^2+5x+5x+25$	
Simplified:	x^2+4x+4	x^2-4x+4	$x^2+10x+25$	$x^2-10x+25$

Brackets:	$(x-2)(x+4)$	$(x+5)(x-3)$	$(x+2)(x-6)$	$(x+2)(x+7)$
Grid:	× | x | 4 x | x^2 | $4x$ -2 | $-2x$ | -8	× | x | -3 x | x^2 | $-3x$ 5 | $5x$ | -15	× | x | -6 x | x^2 | $-6x$ 2 | $2x$ | -12	× | x | 7 x | x^2 | $7x$ 2 | $2x$ | 14
Expanded:	$x^2-2x+4x-8$	$x^2+5x-3x-15$	$x^2+2x-6x-12$	
Simplified:	x^2+2x-8	$x^2+2x-15$	$x^2-4x-12$	$x^2+9x+14$

Task 12 Expanding Double Brackets Practice – Match them up!

A: $(x+20)(x-6)$	**B:** $(x+20)(x+6)$	**C:** $(x+6)(x-4)$	**D:** $(x-6)(x+4)$
E: $(x+6)(x+8)$	**F:** $(x-8)(x+6)$	**G:** $(x+8)(x-6)$	**H:** $(x+10)(x+12)$
I: $(x-4)(x+30)$	**J:** $(x+24)(x+2)$	**K:** $(x+24)(x-2)$	**L:** $(x-10)(x+12)$

E	$x^2+14x+48$
A	$x^2+14x-120$
C	$x^2+2x-24$
G	$x^2+2x-48$

J	$x^2+26x+48$
L	$x^2+2x-120$
D	$x^2-2x-24$
F	$x^2-2x-48$

B	$x^2+26x+120$
I	$x^2+26x-120$
H	$x^2+22x+120$
K	$x^2+22x-48$

Task 13 Expanding Double Brackets - Variation Grids

$(x+14)(x+1)$	$x(x+15)$	$\boldsymbol{(x+16)(x-1)}$	$(x+17)(x-2)$	$(x+18)(x-3)$
$x^2+15x+14$	x^2+15x	$\boldsymbol{x^2+15x-16}$	$x^2+15x-34$	$x^2+15x-54$
$x(x+6)$	$(x+7)(x-1)$	$\boldsymbol{(x+8)(x-2)}$	$(x+9)(x-3)$	$(x+10)(x-4)$
x^2+6x	x^2+6x-7	$\boldsymbol{x^2+6x-16}$	$x^2+6x-27$	$x^2+6x-40$
$\boldsymbol{(x+2)(x-2)}$	$\boldsymbol{(x+3)(x-3)}$	$\boldsymbol{(x+4)(x-4)}$	$\boldsymbol{(x+5)(x-5)}$	$\boldsymbol{(x+6)(x-6)}$
$\boldsymbol{x^2-4}$	$\boldsymbol{x^2-9}$	$\boldsymbol{x^2-16}$	$\boldsymbol{x^2-25}$	$\boldsymbol{x^2-36}$
$x(x-6)$	$(x+1)(x-7)$	$\boldsymbol{(x+2)(x-8)}$	$(x+3)(x-9)$	$(x+4)(x-10)$
x^2-6x	x^2-6x-7	$\boldsymbol{x^2-6x-16}$	$x^2-6x-27$	$x^2-6x-40$
$(x-1)(x-14)$	$x(x-15)$	$\boldsymbol{(x+1)(x-16)}$	$(x+2)(x-17)$	$(x+3)(x-18)$
$x^2-15x+14$	x^2-15x	$\boldsymbol{x^2-15x-16}$	$x^2-15x-34$	$x^2-15x-54$

$(x+4)(x+3)$	$(x+3)^2$	$(x+2)(x+3)$	$(x+1)(x+3)$	$x(x+3)$
$x^2+7x+12$	x^2+6x+9	x^2+5x+6	x^2+4x+3	x^2+3x
$(x+4)(x-3)$	$(x+3)(x-3)$	$(x+2)(x-3)$	$(x+1)(x-3)$	$x(x-3)$
x^2+x-12	x^2-9	x^2-x-6	x^2-2x-3	x^2-3x
$(x-4)(x+3)$	$(x-3)(x+3)$	$(x-2)(x+3)$	$(x-1)(x+3)$	$x(x+3)$
x^2-x-12	x^2-9	x^2+x-6	x^2+2x-3	x^2+3x
$(x-4)(x-3)$	$(x-3)^2$	$(x-2)(x-3)$	$(x-1)(x-3)$	$x(x-3)$
$x^2-7x+12$	x^2-6x+9	x^2-5x+6	x^2-4x+3	x^2-3x