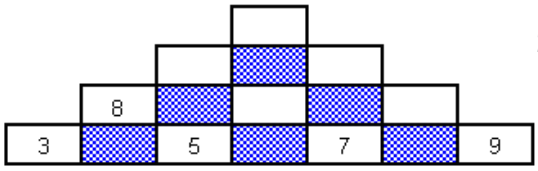
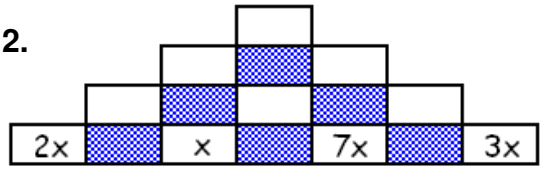
Task A: Algebra Towers

Fill in the missing numbers and expressions in the towers below. To work out a missing square, you must add the two numbers or expressions below it.

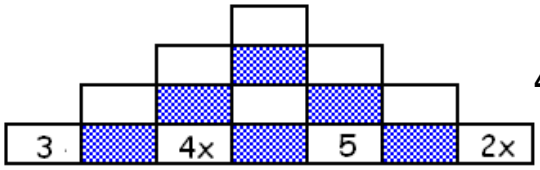
1.



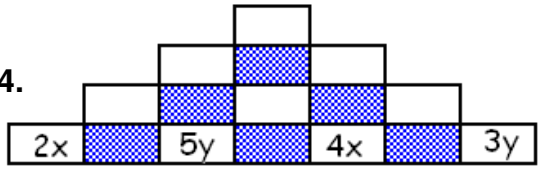
2.



3.



4.



Task B: Magic Squares

Each row, column and diagonal should add up to the same total.

1.

	9X+3Y	4X+8Y
		3X+Y
		8X+6Y
Total =		

2.

-6Z	8Z	
4Z		
Total = 0		

Task C: Substitution

1) By substituting the letters for numbers, work out the value of the expressions below.

A=1	B=2	C=3	D=5	E=7	F=10	G=24	H=100

a)	$A + B$	**e)**	$B \times D$	**i)**	$G \div B$	**m)**	$C \times D - E$
b)	$F - E$	**f)**	$F \times E$	**j)**	$H \div F$	**n)**	$H - G + E$
c)	$B + C + D$	**g)**	$G \times H$	**k)**	$B \times C \times D$	**o)**	$C \times F \div D$
d)	$H - G$	**h)**	$F \div B$	**l)**	$F \times G + H$	**p)**	$E \times C \times D$

Extension Question:
Use the values from the last task to work out the value of the expressions below.

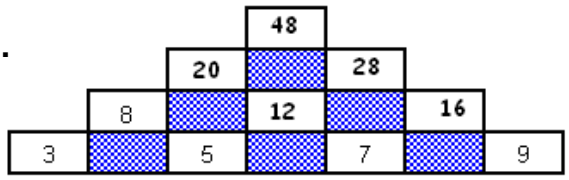
a)	D^2	**b)**	$D(B + C)$	**c)**	$E \div F$	**d)**	B^C

ANSWERS

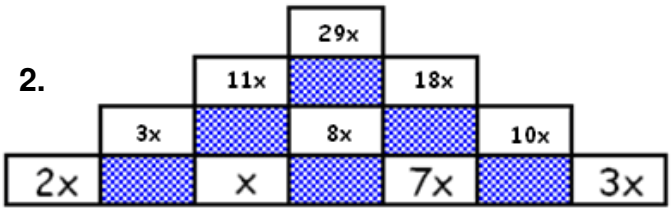
Task A: Algebra Towers

Fill in the missing numbers and expressions in the towers below. To work out a missing square, you must add the two numbers or expressions below it.

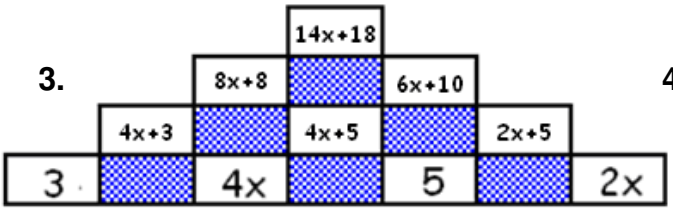
1.



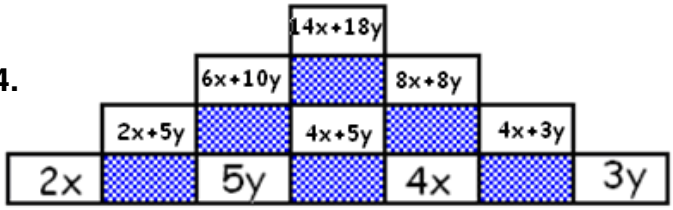
2.



3.



4.



Task B: Magic Squares

Each row, column and diagonal should add up to the same total.

1.

2x+4y	9X+3Y	4X+8Y
7x+9y	***5x+5y***	3X+Y
6x+2y	***X+7y***	8X+6Y
Total =15x+15y		

2.

-6Z	8Z	***-2z***
4Z	***0***	***-4z***
2z	***-8z***	***6z***
Total = 0		

Task C: Substitution

1) By substituting the letters for numbers, work out the value of the expressions below.

A=1	B=2	C=3	D=5	E=7	F=10	G=24	H=100

a) $A + B = 3$
b) $F - E = 3$
c) $B + C + D = 10$
d) $H - G = 76$
e) $B \times D = 10$
f) $F \times E = 70$
g) $G \times H = 2400$
h) $F \div B = 5$
i) $G \div B = 12$
j) $H \div F = 10$
k) $B \times C \times D = 30$
l) $F \times G + H = 340$
m) $C \times D - E = 8$
n) $H - G + E = 83$
o) $C \times F \div D = 6$
p) $E \times C \times D = 105$

Extension Question:
Use the values from the last task to work out the value of the expressions below.

a) $D^2 = 25$
b) $D(B + C) = 25$
c) $E \div F = 0.7$
d) $B^C = 8$