

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
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- | | | | |
|----------------|-----------------|--------------------------|--------------------------|
| 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:

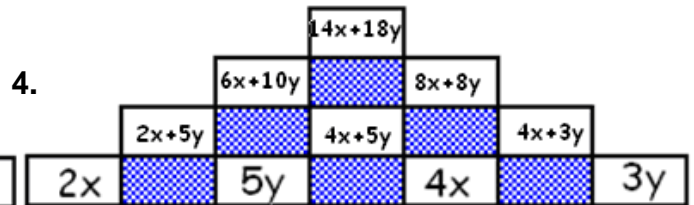
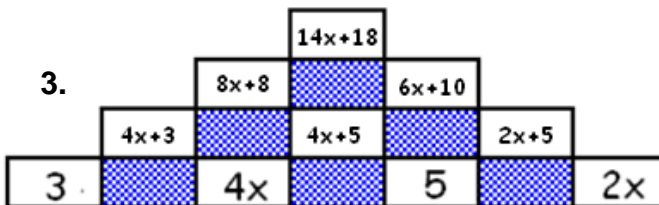
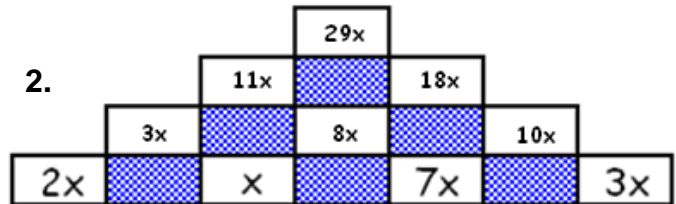
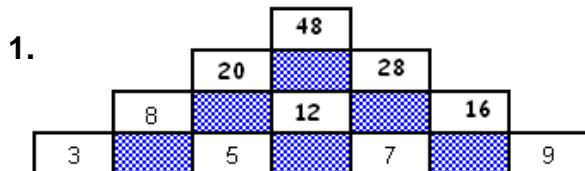
Use the values from the last task to work out the value of the expressions below.

- | | | | |
|----------|---------------|---------------|----------|
| 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.



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