

For each puzzle,

- find the value of each expression
- shade in your values on the diagram on the right
- your answers should make a path across the board from S to F

**Puzzle 1**

$a = 5$  and  $b = 3$

A  $2a + 3b$

B  $a^2 + a - b$

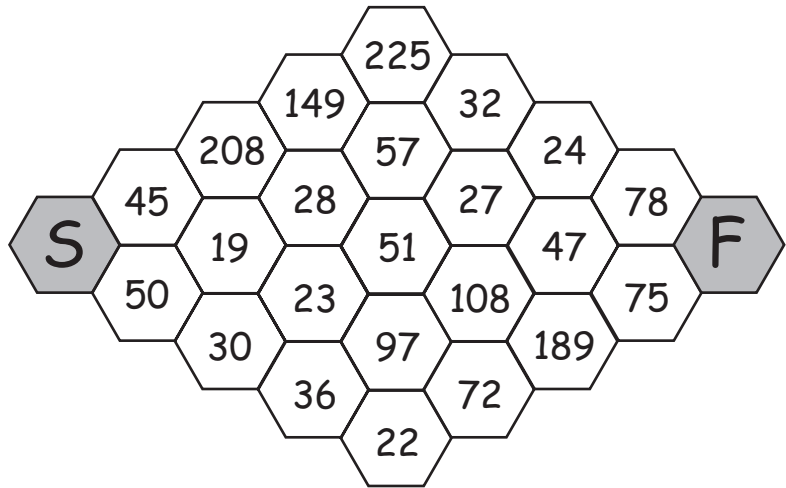
C  $2a^2 - b$

D  $2ab - a + b$

E  $3a^2 - 2b^2$

F  $a^2b$

G  $ab^2$



**Puzzle 2**

$x = 4$  and  $y = 1$

A  $5x + 3y$

B  $xy + x$

C  $xy^2$

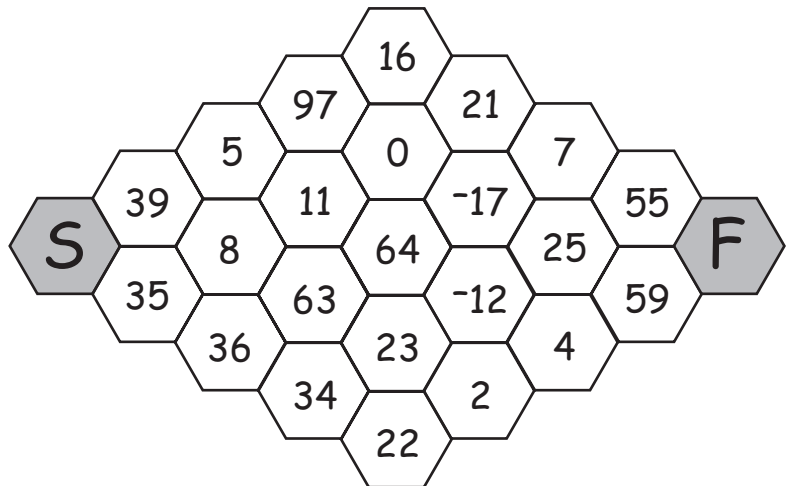
D  $4x^2 - 9y^2$

E  $x^2 - y + 5x$

F  $x^3 - y$

G  $y^3 + y^2$

H  $(y + x)^2$



**Puzzle 3**

$p = 3, q = 2$  and  $r = -1$

A  $5pq + r$

B  $2pq + qr$

C  $3p^2q$

D  $q^2 + pr$

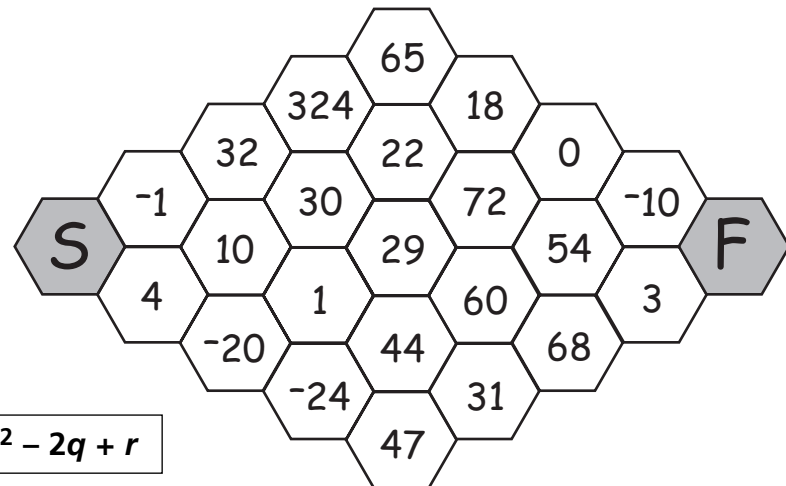
E  $r^2 + q - p$

F  $pq + pr$

G  $2p^2 + q^2$

H  $qp^2$

I  $p^2 - 2q + r$



Cut out the 18 rectangular 'cover-up' pieces below.

Put the pieces on the board so that each piece covers a pair of expressions which multiply to give that answer.

For example,  $6ab$  could cover  $2a$  and  $3b$  or it could cover  $3a$  and  $2b$ .

The pieces can be put this way  or this way .

- Can you find a way to cover the whole board?

**Cover-up board**

$7a$	$b$	$5b^2$	$a$	$a^2$	$3a^2$
$a$	$4a$	$3a$	$b$	$4a$	$2b$
$3a^2$	$b$	$2a$	$4b^2$	$2b$	$3a$
$7ab$	$2$	$3b$	$5$	$2a$	$3a$
$ab^2$	$4b^2$	$4a$	$b^2$	$2a^2$	$11ab$
$6a$	$2b$	$5b$	$b$	$a$	$ab$

**Cover-up pieces**

$8b^2$	$6ab$	$8b^3$	$6a^2b$
$3a^2b$	$7a^2$	$5ab^2$	$4a^3$
$12ab$	$4ab$	$3ab$	$5b^2$
$11a^2b^2$	$10a$	$9a^2$	$4ab^2$
$2a^3$	$7a^2b^3$		