PATTERN $b = \boxed{2}$ 7   22   47

1st DIFF   5   15   25

2nd DIFF $2a = \boxed{10}$ 10

Rule is : $5x^2 + 2$

QUADRATIC

$ax^2 + b$

$5x^2 + 2$

Check

$f(3) = 5(3)^2 + 2 = 47$

it works!

P. 31 (i)

PATTERN $0 \overset{= b}{}$ 3   12   27   48

1ST DIFF   3   9   15   21

2nd DIFF $2a = 6$ 6   6

QUADRATIC

$ax^2 + b$

$= 3x^2$

check $f(2) = 3(2)^2 = 12$ ✓

works

Rule is : $3x^2$

p.31 Q2(i)

PATTERN	-1	3	15	35	63
1ST DIFF		4	12	20	28
2ND DIFF			8	8	8

$=b$

$2a =$

QUADRATIC

$ax^2 + b$

$4x^2 - 1$

check: $f(3) = 4(3)^2 - 1 = 35$ ✓ it works

Rule: $4x^2 - 1$

PATTERN	4	10	18	28
1ST DIFF		6	8	10
2ND DIFF			2	2

x	0	1	2	3
PATTERN	4	10	18	28
$-x^2$	-0	-1	-4	-9
LINEAR	4	9	14	19
		5	5	5

QUADRATIC
$ax^2 + b$
$1x^2 + 4$

check:
$f(3) = (3)^2 + 4 = 13$ ✗
doesn't work!

LINEAR
$ax + b$
$= 5x + 4$

check:
$f(2) = (2)^2 + 5(2) + 4 = 18$ ✓

Rule is: $1x^2 + 5x + 4$

10th Term $= f(9) = (9)^2 + 5(9) + 4$
$= 130$