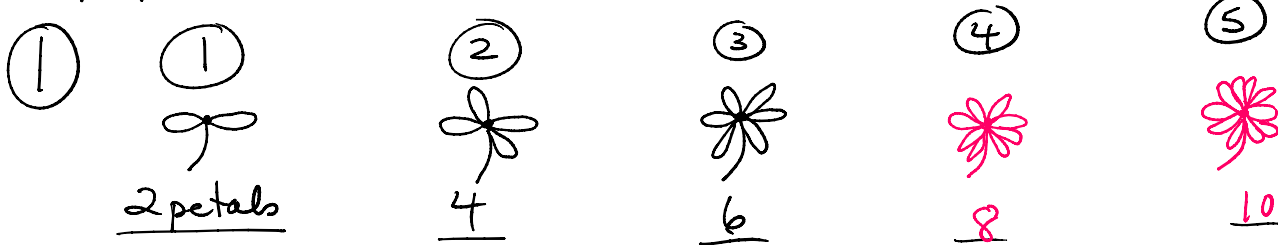# PATTERNS

① ① ② ③ ④ ⑤

2 petals   4   6   8   10

a) draw the next two pictures, number of petals below

b) note any pattern(s) — describe in words (be precise)
 — # of petals are even numbers starting at 2
 — # of petals increases by 2 each time
 — # of petals is double (2x) the picture number

c) table of values showing the information

figure #	# petals
1	2
2	4
3	6
4	8
5	10

gap = 2 ← Same gap for all
this is a linear relation

d) create an equation representing the pattern.

gap × fig # ± ____ = # petals

2	×	1		= 2
2	×	2		= 4
2	×	3		= 6
2	×	4		= 8

2 ↓   ↓   varies

$\downarrow$ a
$\downarrow$
$\downarrow$

fixed
— same

varies
— VARIABLE
F

varies
— VARIABLE
P

$$2F = P$$

e) now you could find any figure # with any petal #

if f = 20

$2f = p$
$2(20) = p$
$40 = p$

if p = 100

$2f = p$
$2f = 100$
$f = 50$

② ① △ 3 toothpicks

② ◁▽ 5

③ △▽△ 7

④ △▽△▽ 9

⑤ △▽△▽△ 11

a) draw next two, and numbers

b) pattern(s) — describe — be precise
— add numbers starting at 3

c) table

fig #	# tp
1	3
2	5
3	7

gap = 2

$$
\begin{array}{c|c}
2 & 5 \\
3 & 7 \\
4 & 9 \\
5 & 11
\end{array}
\qquad \text{gap} = 2
$$

d) equation

gap	×	fig #	± ___	= #♭p
2	×	1	+1	= 3
2	×	2	+1	= 5
2	×	3	+1	= 7

FIXED   VARIES   FIXED   VARIES

F   𝓉

$$\boxed{2F + 1 = 𝓉}$$

ex. 1   1, 3, 5, 7, 9, 11

table

fig #	# (number)
1	1
2	3
3	5
4	7
5	9
6	11

gap = $\boxed{2}$

equation

gap	×	fig#	± ___	= number
$\boxed{2}$	×	1	−1	= 1
$\boxed{2}$	×	2	−1	= 3

$$2F - 1 = n$$

homework   P 137 #4, 5

p 151 #4...

and

① 3, 6, 9, —, —, —

② 22, 20, 18, —, —, —

③ 35, 30, 25, —, —, —

— fill in next 3
— make a table
— write an equation