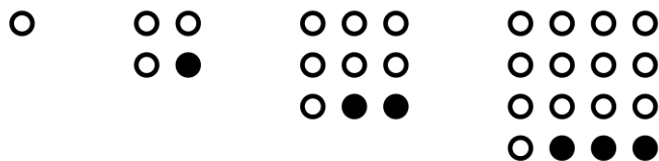
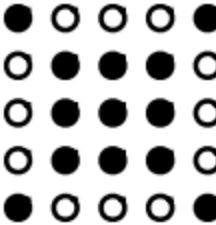
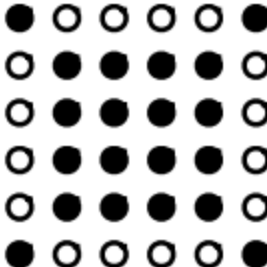


Adapted from *Generating Polynomials from Patterns* task, Mathematics Assessment Project:
<http://map.mathshell.org/download.php?fileid=1728>

$$n = 1 \qquad n = 2 \qquad n = 3 \qquad n = 4 \qquad n = 5$$


1. Draw the picture for $n = 5$ in the space above.
2. Describe the pattern in the **black** dots. You can use words, pictures, and/or mathematical expressions.
3. Describe the pattern in the **white** dots. You can use words, pictures, and/or mathematical expressions.
4. Describe the pattern in the **total** number of dots. You can use words, pictures, and/or mathematical expressions.
5. On your picture for $n = 5$, circle the dots that are being modeled by the expression $n^2 - (n - 1)$.

Consider this pattern:

$n = 1$	$n = 2$	$n = 3$	$n = 4$
			

6. What could each of these expressions be modeling?

a) 4	
b) n^2	
c) $4n$	
d) $n^2 + 4$	
e) $(n + 2)^2$	
f) $(n^2 + 4) + 4n$	