**Position Pattern:**

**P = 4:**

1 1 1 0 if p % 4 = 0 (that means that the top has 1’s and one 0)

1 1 1 0 point one 1 right then invers 0

1 1 1 0

0 0 0 0

**P = 6:**

0 0 0 0 0 1 if p % 4 != 0 (that means that the top has (p – 1) 0’s and one 1)

0 1 1 1 0 1

0 1 1 1 0 1

0 1 1 1 0 1

0 0 0 0 0 1

1 1 1 1 1 1

**P = 8:**

1 1 1 1 1 1 1 0 if p % 4 = 0 (that means that the top has 1’s and one 0)

1 0 0 0 0 0 1 0 First row down: amount 1’s: p – 1 and has one 0 at the end

1 0 1 1 1 0 1 0 Line 2 middle always has five 0’s after p = 4

1 0 1 1 1 0 1 0 Line 3,4,5 always three 1’s in the middle

1 0 1 1 1 0 1 0

1 0 0 0 0 0 1 0

1 1 1 1 1 1 1 0

0 0 0 0 0 0 0 0

Movie: into the wild

**p = 10**

0 0 0 0 0 0 0 0 0 1

0 1 1 1 1 1 1 1 0 1

0 1 0 0 0 0 0 1 0 1

0 1 0 1 1 1 0 1 0 1

0 1 0 1 1 1 0 1 0 1

0 1 0 1 1 1 0 1 0 1

0 1 0 0 0 0 0 1 0 1

0 1 1 1 1 1 1 1 0 1

0 0 0 0 0 0 0 0 0 1

1 1 1 1 1 1 1 1 1 1

**p = 12**

11 1 1 1 1 1 1 1 1 1 0

1 0 0 0 0 0 0 0 0 0 1 0

1 0 1 1 1 1 1 1 1 0 1 0

1 0 1 0 0 0 0 0 1 0 1 0

1 0 1 0 1 1 1 0 1 0 1 0

1 0 1 0 1 1 1 0 1 0 1 0

1 0 1 0 1 1 1 0 1 0 1 0

1 0 1 0 0 0 0 0 1 0 1 0

1 0 1 1 1 1 1 1 1 0 1 0

1 0 0 0 0 0 0 0 0 0 1 0

11 1 1 1 1 1 1 1 1 1 0

0 0 0 0 0 0 0 0 0 0 0 0

**Alignment Pattern:**

**a = 1:**

1

**a = 5:**

1 1 1 1 1

1 0 0 0 1

1 0 1 0 1

1 0 0 0 1

1 1 1 1 1

**a = 9:**

1 1 1 1 1 1 1 1 1

1 0 0 0 0 0 0 0 1

1 0 1 1 1 1 1 0 1

1 0 1 0 0 0 1 0 1

1 0 1 0 1 0 1 0 1

1 0 1 0 0 0 1 0 1

1 0 1 1 1 1 1 0 1

1 0 0 0 0 0 0 0 1

1 1 1 1 1 1 1 1 1

1. **Encoding parameter: (encoding\_parameter)**

An integer between 0 (inclusive) and 32 (exclusive)