Binomial Coefficients – Negative and Fractional

$$\binom{n}{1} = n \qquad \binom{n}{2} = \frac{n(n-1)}{2!} \qquad \binom{n}{3} = \frac{n(n-1)(n-2)}{3!} \qquad \binom{n}{4} = \frac{n(n-1)(n-2)(n-3)}{4!}$$

$$\binom{10}{3} = \frac{10 \times 9 \times 8}{6} = 120 \qquad \binom{-1}{2} = \frac{-1 \times -2}{2} = 1 \qquad \binom{-2}{3} = \frac{-2 \times -3 \times -4}{6} = -4$$

$$\binom{0.5}{2} = \frac{0.5 \times -0.5}{2} = -\frac{1}{8}$$

Question 1

$$\binom{8}{2} = \frac{8\times____}{____!} =$$

Question 2

$$\binom{7}{4} = \frac{7\times____\times____\times____}{____!} =$$

Question 3

$$\binom{-1}{3} = \frac{-1\times____\times____}{____!} =$$

Question 4

$$\binom{-2}{4} = \frac{-2\times_____}{____!} =$$

Question 5

$$\binom{-3}{2} = \frac{-3\times____}{____!} =$$

Question 6

$$\binom{\frac{1}{2}}{3} = \frac{\frac{1}{2}\times____\times____}{____!} =$$

Question 7

$$\binom{\frac{1}{2}}{4} = \frac{\frac{1}{2}\times_____}{____!} =$$

Question 8

$$\binom{\frac{1}{3}}{2} = \frac{\frac{1}{3}\times____}{____!} =$$

Question 9

$$\binom{\frac{1}{5}}{2} =$$

Question 10

$$\binom{\frac{1}{6}}{3} =$$

Question 11

$$\binom{-\frac{1}{2}}{2} =$$

Question 12

$$\binom{-\frac{1}{3}}{3} =$$