ex.2   1~9任选3个数字, 求选法 ✓

1) 三数相加为 even

3 even or 1even 2odd

$$\binom{4}{3} + \binom{4}{1}\binom{5}{2}$$

$$= 4 + 4\binom{5}{2}$$

$$= 4 + 2\cdot 2\binom{5}{2}$$

$$= 4 + 2\cdot 5\binom{4}{}$$

$$= 4 + 40$$

$$= 44 \#$$

2) 三数相乘为 even

1 even + 任意

$$\binom{4}{1}\binom{8}{2}$$

$$= 4\cdot\binom{8}{2}$$

$$= 2\cdot 2\binom{8}{2}$$

$$= 2\cdot 8\binom{7}{1}$$

$$= 16\cdot 7 = 112 \#$$

1even+ 2even + 3even

$$\binom{3}{1}\binom{4}{1} + \binom{3}{2}\binom{4}{1}\binom{3}{2} + \binom{3}{3}\binom{4}{1}\binom{3}{2}\binom{3}{1}$$

$$= 3\cdot 4 + 3\cdot 4\cdot 3 + 1\cdot 4\cdot 3\cdot 2$$

$$= 12 + 36 + 24$$

$$= 72 \#$$