

$$f = \cos(180^\circ) = -1$$

$$f = \cos(135^\circ) = -1/\sqrt{2}$$

$$f = \cos(90^\circ) = 0$$

$$f = \cos(60^\circ) = 1/2$$

$$f = \cos(30^\circ) = \sqrt{3}/2$$

$$f = \cos(0) = 1$$

$$r = 10^{-137}$$
