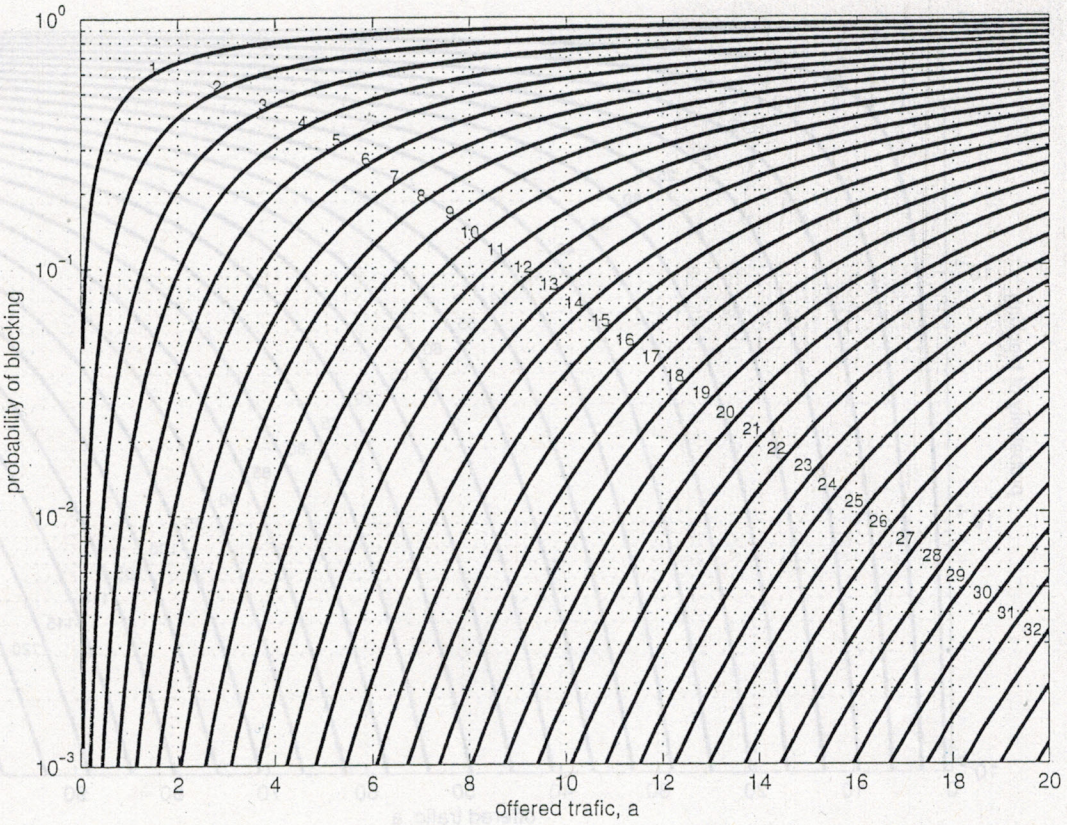


Figure 10.4: Erlang B curves.

## Examples

1. **Load Tripling.** In this example we will briefly consider the effect of increasing load in an Erlang Loss system.

   (a) For a blocking probability of 0.01, what is the number of trunks needed for 6 Erlangs of offered load?

   (b) For a blocking probability of 0.01, what is the number of trunks needed for 18 Erlangs?

   (c) Comment on the increase in load compared to the increase in the number of trunks.

### Answer

(a) 13

(b) 28

(c) A load increase of 200 % only lead to a trunk increase of 133 %. To understand this further we look at the utilization factors. For the first system the utilisation factor is

$$\rho_1 = \frac{6}{13}(1 - 0.005) = 0.459$$

whereas for the second system the utilisation factor is

$$\rho_2 = \frac{18}{28}(1 - 0.007) = 0.6384$$