Task. In a standard normal distribution, what is the probability of randomly selecting a value between -2.555 and -0.745? Round to four decimal places.

Solution. Let X be the random variable having standard normal distribution. Then the values of its distribution function
$$F(t) = P(X < t)$$
can usually be found in any book in probability theory.

We should compute the probability
$$P(-2.555 \le X \le -0.745) = F(-0.745) - F(-2.555) \approx 0.228136 - 0.005309 \approx 0.2228.$$