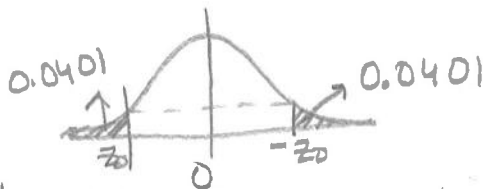


5.28

Find a value z_0 of the standard normal random variable z such that

- a. $P(z \leq z_0) = .0401$
- b. $P(-z_0 \leq z \leq z_0) = .95$
- c. $P(-z_0 \leq z \leq z_0) = .90$
- d. $P(-z_0 \leq z \leq z_0) = .8740$
- e. $P(-z_0 \leq z \leq 0) = .2967$
- f. $P(-2 < z < z_0) = .9710$
- g. $P(z \geq z_0) = .5$
- h. $P(z \geq z_0) = .0057$



a. $P(z \leq z_0) = .0401$

$P(0 < z \leq -z_0) = 0.5 - 0.0401 = 0.4599 \Rightarrow -z_0 = 1.75 \Rightarrow z_0 = -1.75$

b. $P(z > z_0) = 0.025 \Leftrightarrow P(0 < z < z_0) = 0.475 \rightarrow z_0 = 1.96$

c. $P(z > z_0) = 0.05 \Leftrightarrow P(0 < z < z_0) = 0.45 \rightarrow z_0 = 1.645$

d. $P(z > z_0) = 0.063 \Leftrightarrow P(0 < z < z_0) = 0.437 \rightarrow z_0 = 1.537$

e. $P(0 \leq z \leq z_0) = 0.2967 \Rightarrow z_0 = 0.83$

f. $P(0 < z < z) = 0.4772$

$P(0 < z < z_0) = 0.9710 - 0.4772 = 0.4938 \rightarrow z_0 = 2.5$

g. $z_0 = 0$

h. $P(z \geq z_0) = .0057$

\downarrow
 $P(0 \leq z \leq z_0) = 0.5 - 0.0057$
 $= 0.4943 \Rightarrow z_0 = 2.53$

