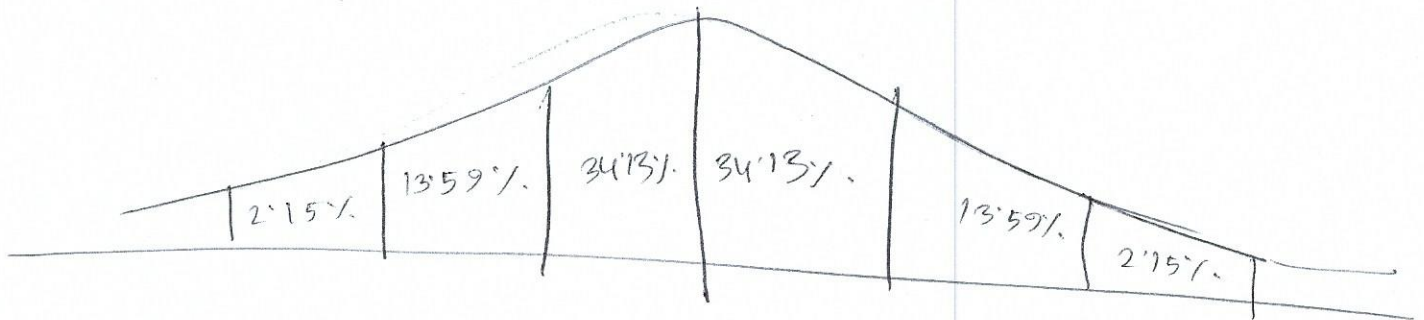
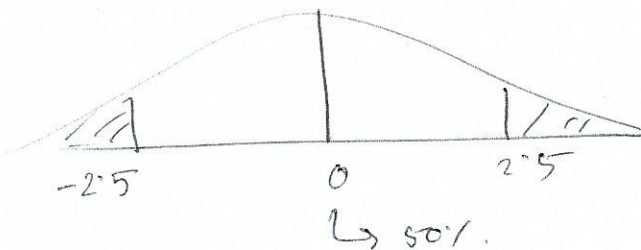


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Probability under the curve is always one.



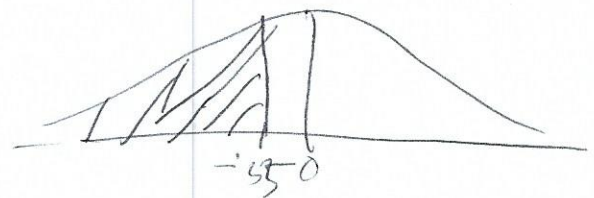
$$P(z > 2.5)$$

a) $z = -3.49$

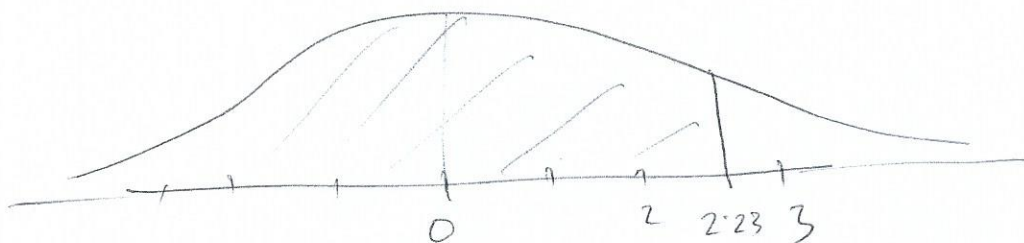
$$P(z < -3.49) = 0.0002$$

b) $z = -0.55$

$$P(z < -0.55) = 0.2912$$



c) $z = 2.23$



$$P(z < 2.23) = 0.9871.$$

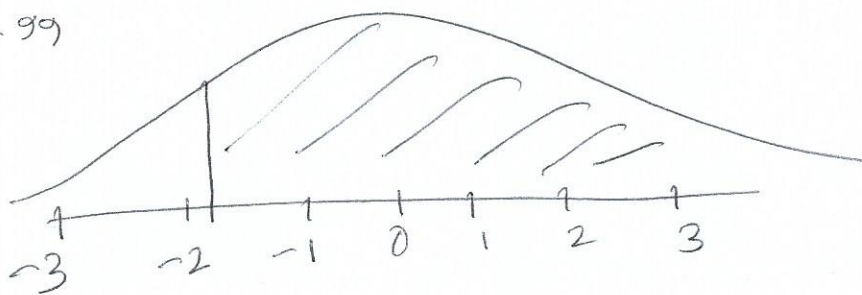
Right of a z-score.

a) $z = -3.49$

$$P(z > -3.49) = 1 - 0.0002 = 0.9998$$

$$\text{Prob}(z > -3.49) \text{ and } P(z < 3.49) = 0.9998.$$

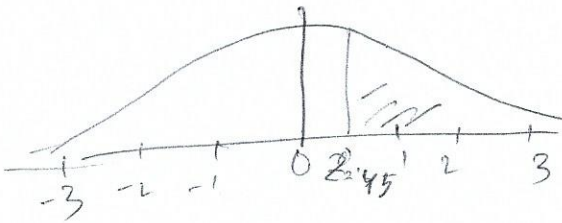
b) $z = -1.99$



$$P(z > -1.99) = 0.9767$$

$$P(z > -1.99) = 1 - 0.0233 = 0.9767$$

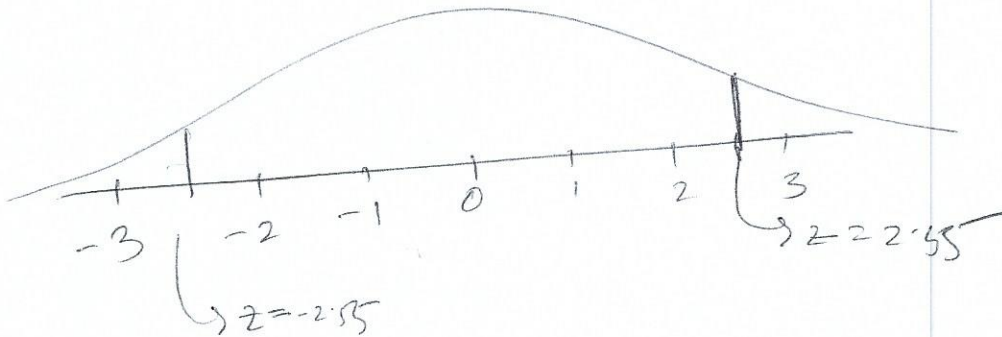
$$c) z = 0.45$$



$$P(z > 0.45) = 0.3264$$

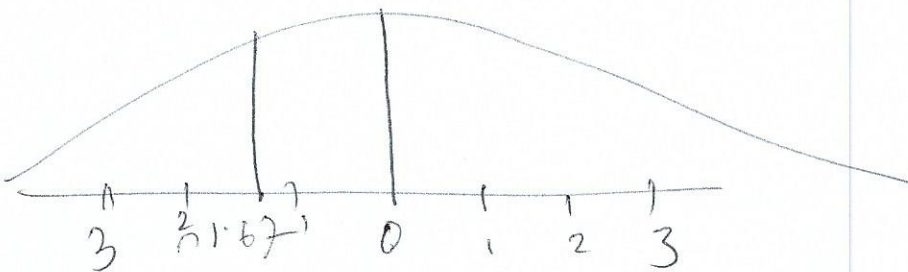
Between two z-score

$$a) z = -2.55 \text{ and } z = 2.55$$



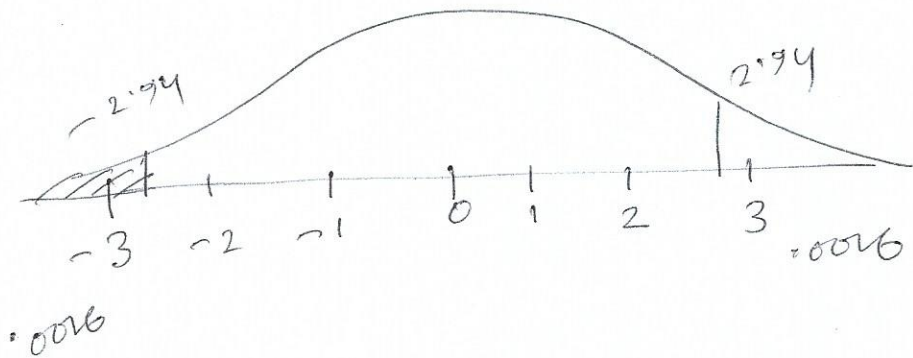
$$0.9946 - 0.0054 = 0.9892$$

$$b) z = -1.67 \text{ and } z = 0$$



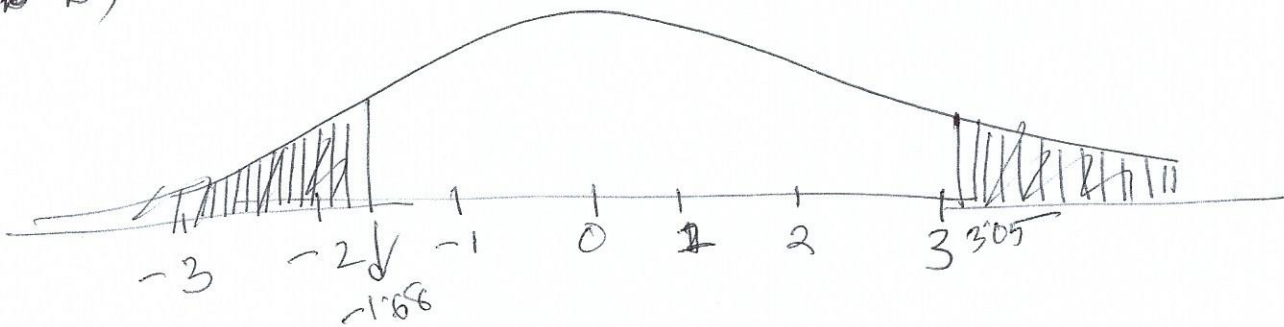
$$P(-1.67 - z < 0) = 0.5 - 0.0475 = 0.4525$$

Finding the area of either side of the tails.



$$P(Z < -2.94 \text{ or } Z > 2.94) = 0.0026 + 0.0026 = 0.0052$$

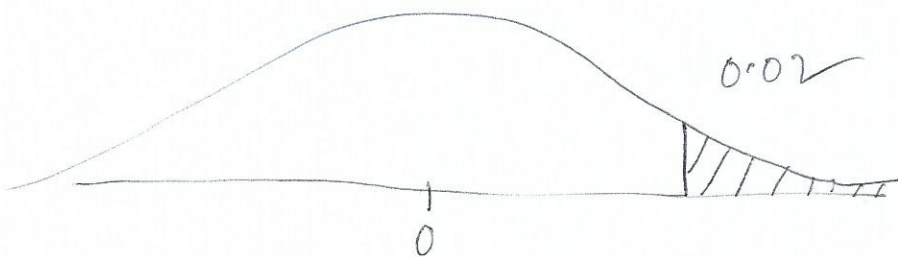
b)



$$P(Z < -1.68 \text{ or } Z > 3.05) = 0.0465 + 0.0011$$

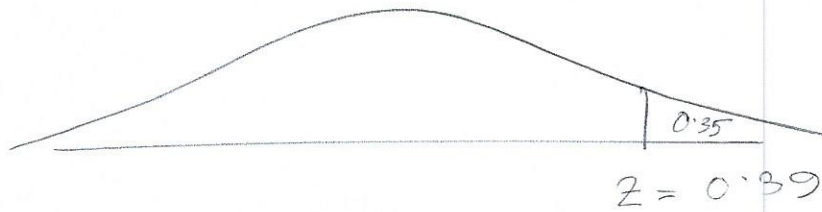
$$= 0.0476$$

a) $Z_{0.02}$

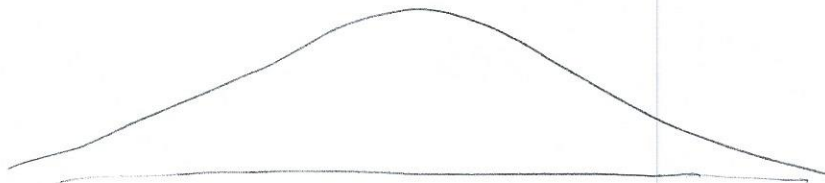


$$Z_{\alpha} = Z_{0.02} = 2.05$$

b) $z_{0.35}$

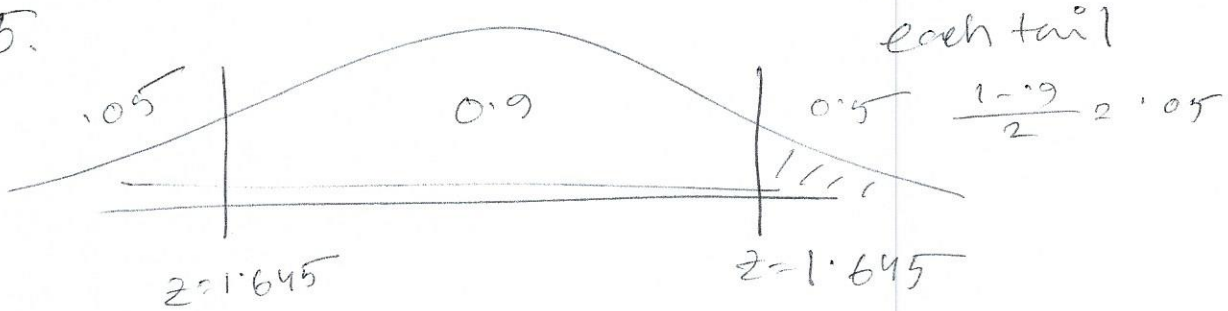


$z_{0.05}$



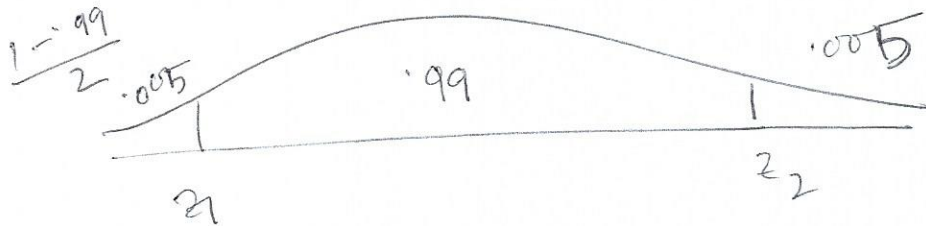
$$z_{0.05} = \frac{1.64 + 1.65}{2} = 1.645$$

5.



$$-1.645 = Z = \frac{x - \mu}{\sigma} = \frac{x - 100}{5} = 91.77$$

$$1.645 = \frac{x - 100}{5} = 108.23$$



$$\frac{(-2.57) + (-2.58)}{2} = -2.575$$

