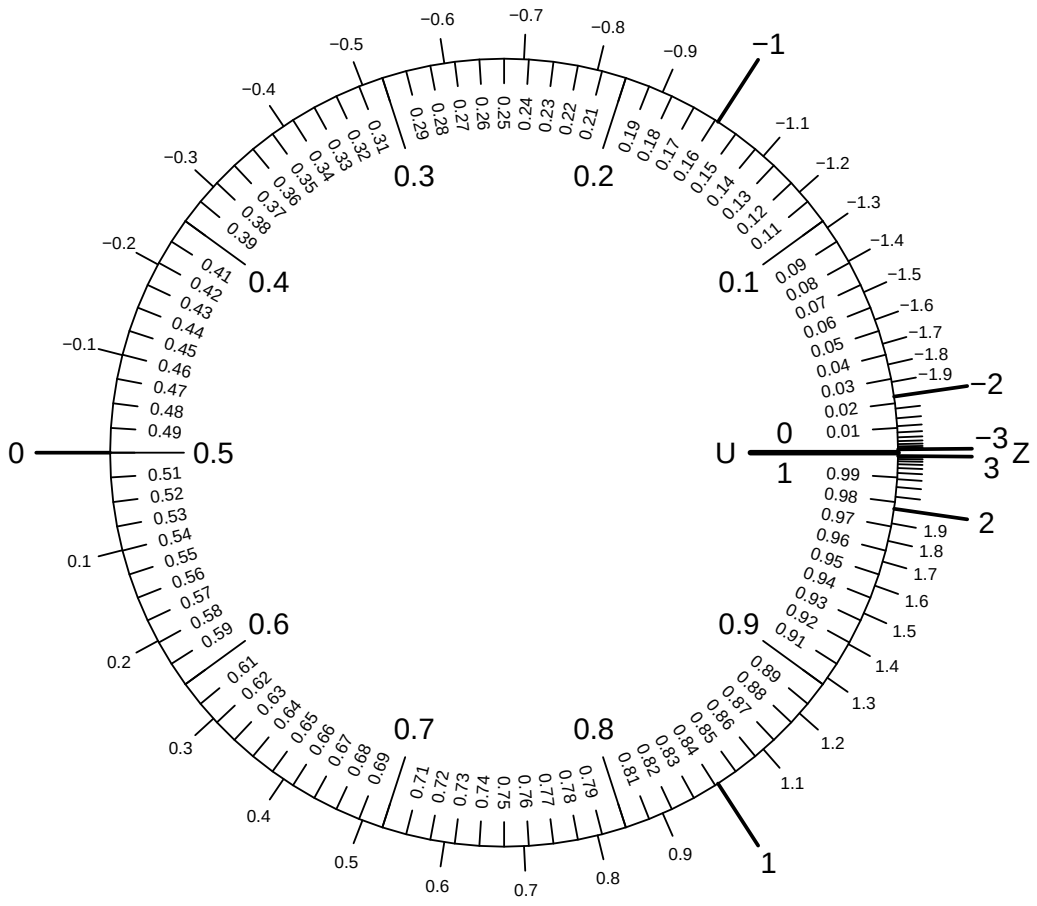
1. **Problem:**
   The spinner below has two distributions. The outer distribution (Z) is the standard normal distribution. The inner distribution (U) is the standard uniform distribution, which also corresponds to the percentile. To answer the questions below, assume the spinner is equally likely to land in any direction.



(a) Evaluate $P(Z < 0.1)$

(b) Determine z such that $P(Z < z) = 0.75$

(c) Evaluate $P(Z > 1.4)$

(d) Determine z such that $P(Z > z) = 0.15$

(e) Evaluate $P(0.4 < Z < 0.5)$

(f) Evaluate $P(|Z| < 2)$

(g) Determine z such that $P(|Z| < z) = 0.84$

(h) Evaluate $P(|Z| > 1.4)$

(i) Determine z such that $P(|Z| > z) = 0.06$

Solution:

(a) $P(Z < 0.1) =$ 0.54

(b) $z =$ 0.67

(c) $P(Z > 1.4) =$ 0.081

(d) $z =$ 1.04

(e) $P(0.4 < Z < 0.5) =$ 0.036

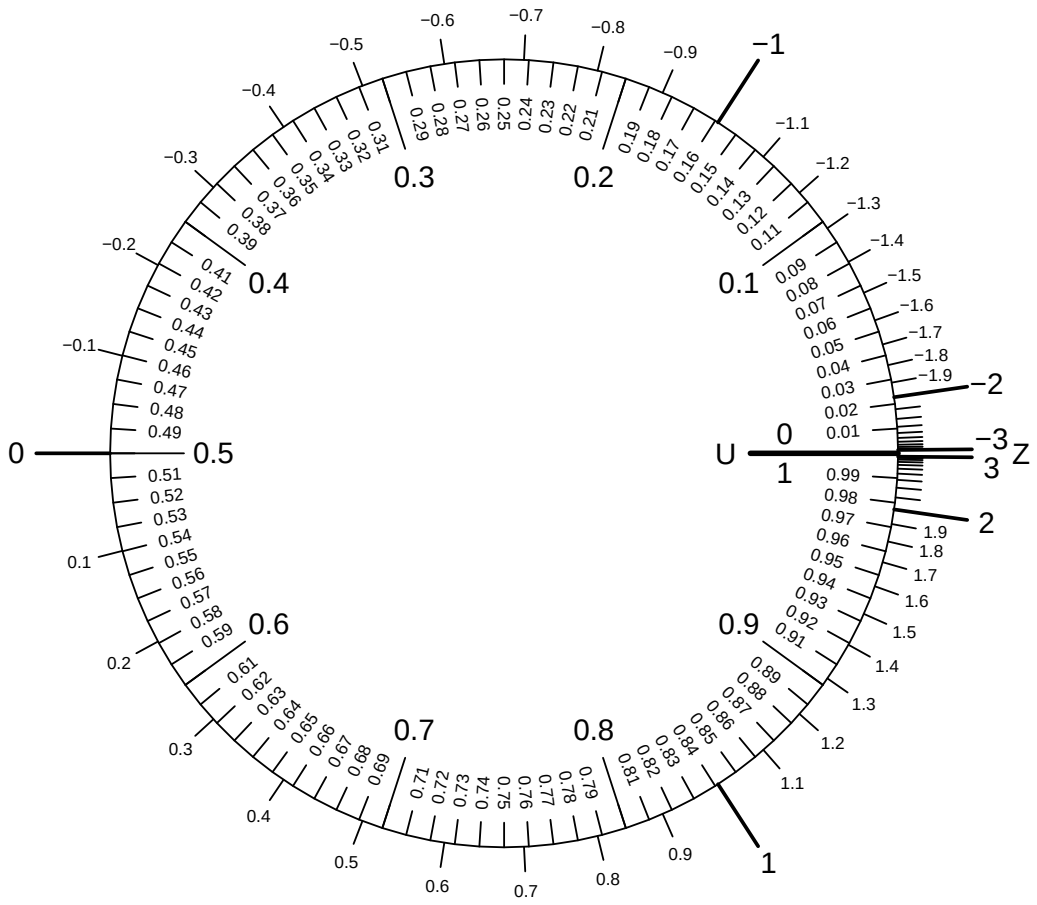
(f) $P(|Z| < 2) =$ 0.954

(g) $z =$ 1.41

(h) $P(|Z| > 1.4) =$ 0.162

(i) $z =$ 1.88

2. **Problem:**
The spinner below has two distributions. The outer distribution (Z) is the standard normal distribution. The inner distribution (U) is the standard uniform distribution, which also corresponds to the percentile. To answer the questions below, assume the spinner is equally likely to land in any direction.



(a) Evaluate $P(Z < -1.4)$

(b) Determine z such that $P(Z < z) = 0.91$

(c) Evaluate $P(Z > 0)$

(d) Determine z such that $P(Z > z) = 0.3$

(e) Evaluate $P(-1.1 < Z < 0.4)$

(f) Evaluate $P(|Z| < 1.5)$

(g) Determine z such that $P(|Z| < z) = 0.6$

(h) Evaluate $P(|Z| > 1.2)$

(i) Determine z such that $P(|Z| > z) = 0.7$

Solution:

(a) $P(Z < -1.4) =$ 0.081

(b) $z =$ 1.34

(c) $P(Z > 0) =$ 0.5

(d) $z =$ 0.52

(e) $P(-1.1 < Z < 0.4) =$ 0.519

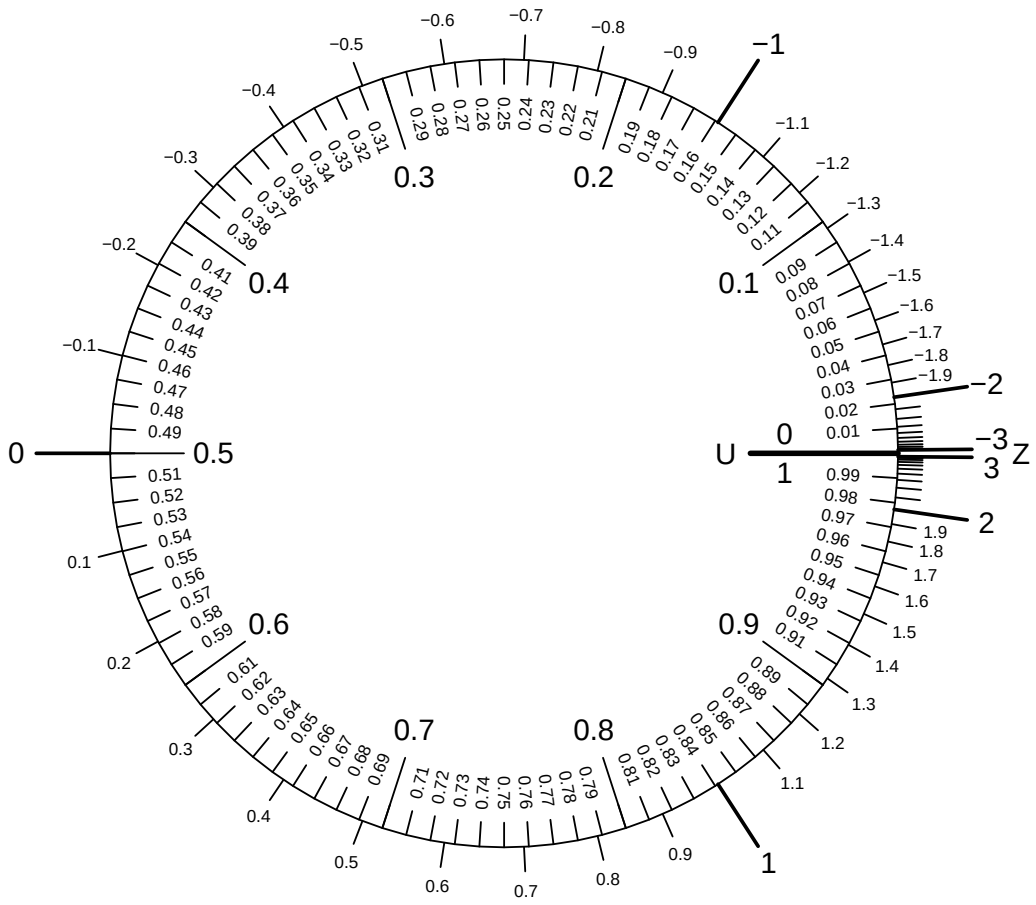
(f) $P(|Z| < 1.5) =$ 0.866

(g) $z =$ 0.84

(h) $P(|Z| > 1.2) =$ 0.23

(i) $z =$ 0.39

3. **Problem:**
The spinner below has two distributions. The outer distribution (Z) is the standard normal distribution. The inner distribution (U) is the standard uniform distribution, which also corresponds to the percentile. To answer the questions below, assume the spinner is equally likely to land in any direction.



(a) Determine z such that $P(|Z| < z) = 0.1$

(b) Determine z such that $P(Z < z) = 0.12$

(c) Evaluate $P(Z > 1)$

(d) Evaluate $P(Z < -0.4)$

(e) Determine z such that $P(Z > z) = 0.84$

(f) Determine z such that $P(|Z| > z) = 0.84$

(g) Evaluate $P(|Z| < 1)$

(h) Evaluate $P(|Z| > 0.4)$

(i) Evaluate $P(-0.1 < Z < 0.2)$

Solution:

(a) $z =$ 0.13

(b) $z =$ -1.17

(c) $P(Z > 1) =$ 0.159

(d) $P(Z < -0.4) =$ 0.345

(e) $z =$ -0.99

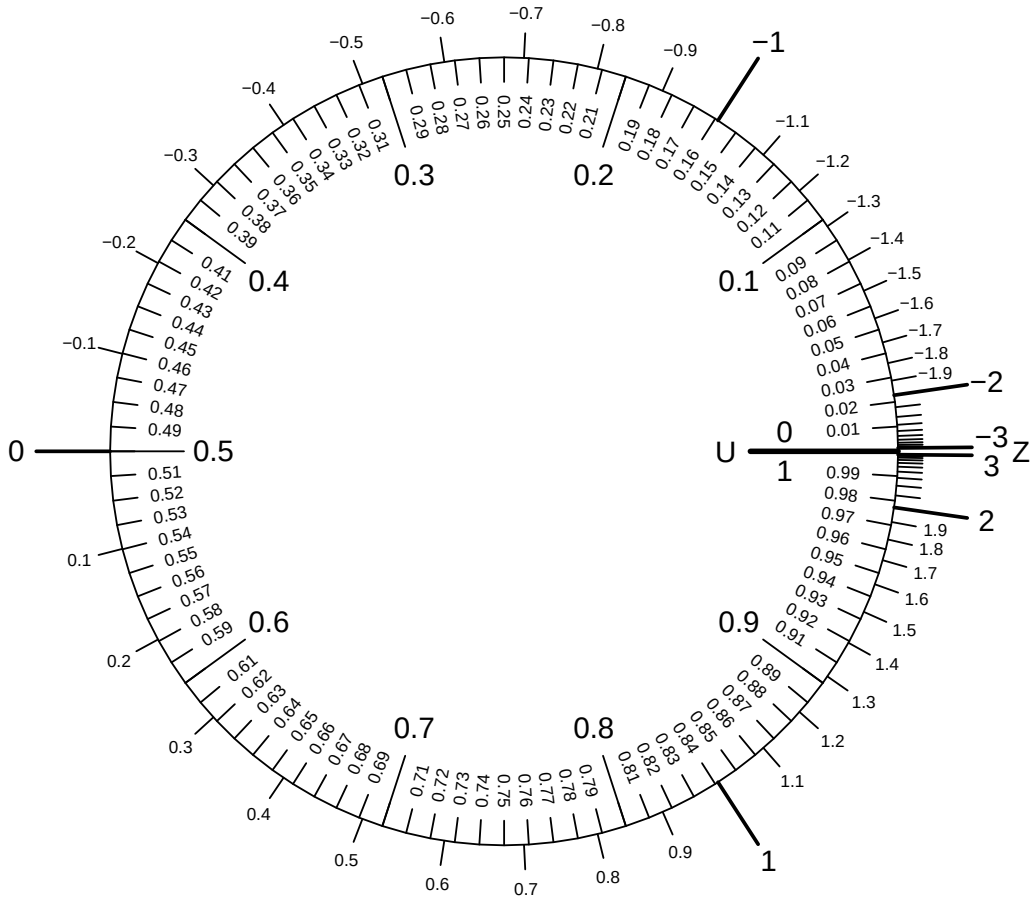
(f) $z =$ 0.2

(g) $P(|Z| < 1) =$ 0.683

(h) $P(|Z| > 0.4) =$ 0.689

(i) $P(-0.1 < Z < 0.2) =$ 0.119

4. **Problem:**
The spinner below has two distributions. The outer distribution (Z) is the standard normal distribution. The inner distribution (U) is the standard uniform distribution, which also corresponds to the percentile. To answer the questions below, assume the spinner is equally likely to land in any direction.



(a) Evaluate $P(-0.5 < Z < -0.4)$

(b) Evaluate $P(|Z| > 1.4)$

(c) Determine z such that $P(Z < z) = 0.11$

(d) Determine z such that $P(|Z| < z) = 0.72$

(e) Determine z such that $P(|Z| > z) = 0.82$

(f) Evaluate $P(|Z| < 1.6)$

(g) Evaluate $P(Z < 0.3)$

(h) Evaluate $P(Z > -1.2)$

(i) Determine z such that $P(Z > z) = 0.84$

Solution:

(a) $P(-0.5 < Z < -0.4)$ = 0.036

(b) $P(|Z| > 1.4)$ = 0.162

(c) z = -1.23

(d) z = 1.08

(e) z = 0.23

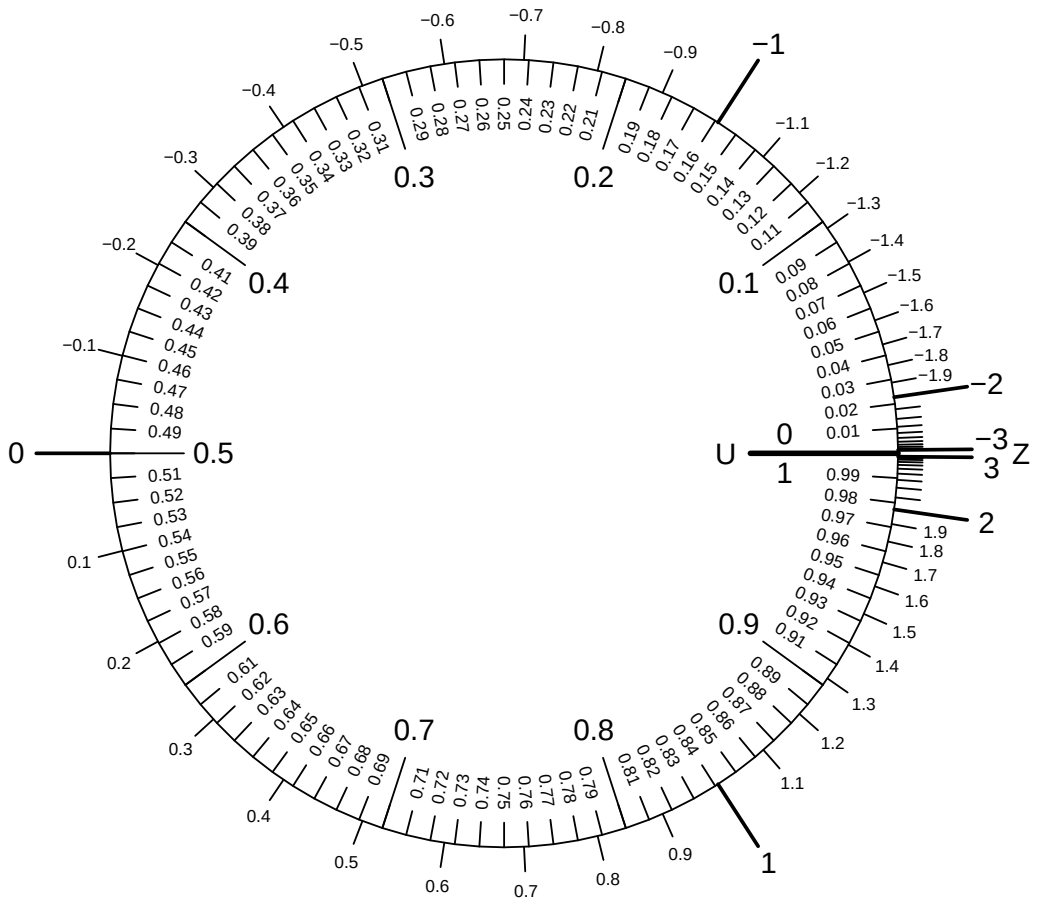
(f) $P(|Z| < 1.6)$ = 0.89

(g) $P(Z < 0.3)$ = 0.618

(h) $P(Z > -1.2)$ = 0.885

(i) z = -0.99

5. **Problem:**
The spinner below has two distributions. The outer distribution (Z) is the standard normal distribution. The inner distribution (U) is the standard uniform distribution, which also corresponds to the percentile. To answer the questions below, assume the spinner is equally likely to land in any direction.



(a) Determine z such that $P(|Z| > z) = 0.46$

(b) Determine z such that $P(Z > z) = 0.41$

(c) Determine z such that $P(|Z| < z) = 0.8$

(d) Determine z such that $P(Z < z) = 0.55$

(e) Evaluate $P(-0.9 < Z < 1.1)$

(f) Evaluate $P(|Z| > 1.3)$

(g) Evaluate $P(Z < 0.2)$

(h) Evaluate $P(|Z| < 0.6)$

(i) Evaluate $P(Z > 0.4)$

Solution:

(a) $z =$ 0.74

(b) $z =$ 0.23

(c) $z =$ 1.28

(d) $z =$ 0.13

(e) $P(-0.9 < Z < 1.1) =$ 0.68

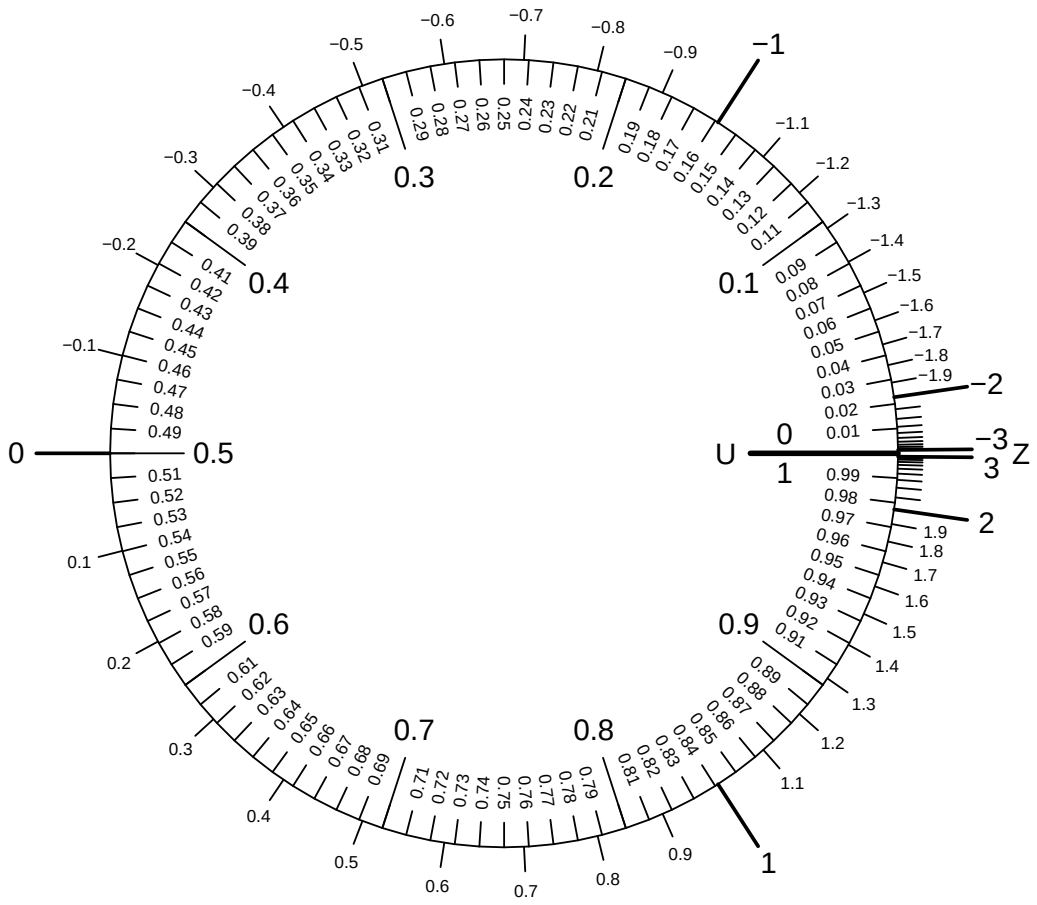
(f) $P(|Z| > 1.3) =$ 0.194

(g) $P(Z < 0.2) =$ 0.579

(h) $P(|Z| < 0.6) =$ 0.451

(i) $P(Z > 0.4) =$ 0.345

6. **Problem:**
The spinner below has two distributions. The outer distribution (Z) is the standard normal distribution. The inner distribution (U) is the standard uniform distribution, which also corresponds to the percentile. To answer the questions below, assume the spinner is equally likely to land in any direction.



(a) Determine z such that $P(|Z| > z) = 0.54$

(b) Determine z such that $P(Z > z) = 0.59$

(c) Evaluate $P(Z > -0.9)$

(d) Evaluate $P(|Z| > 1.4)$

(e) Evaluate $P(|Z| < 0.1)$

(f) Evaluate $P(Z < 1.6)$

(g) Determine z such that $P(|Z| < z) = 0.6$

(h) Determine z such that $P(Z < z) = 0.97$

(i) Evaluate $P(-0.6 < Z < 0.5)$

Solution:

(a) $z =$ 0.61

(b) $z =$ -0.23

(c) $P(Z > -0.9) =$ 0.816

(d) $P(|Z| > 1.4) =$ 0.162

(e) $P(|Z| < 0.1) =$ 0.08

(f) $P(Z < 1.6) =$ 0.945

(g) $z =$ 0.84

(h) $z =$ 1.88

(i) $P(-0.6 < Z < 0.5) =$ 0.417