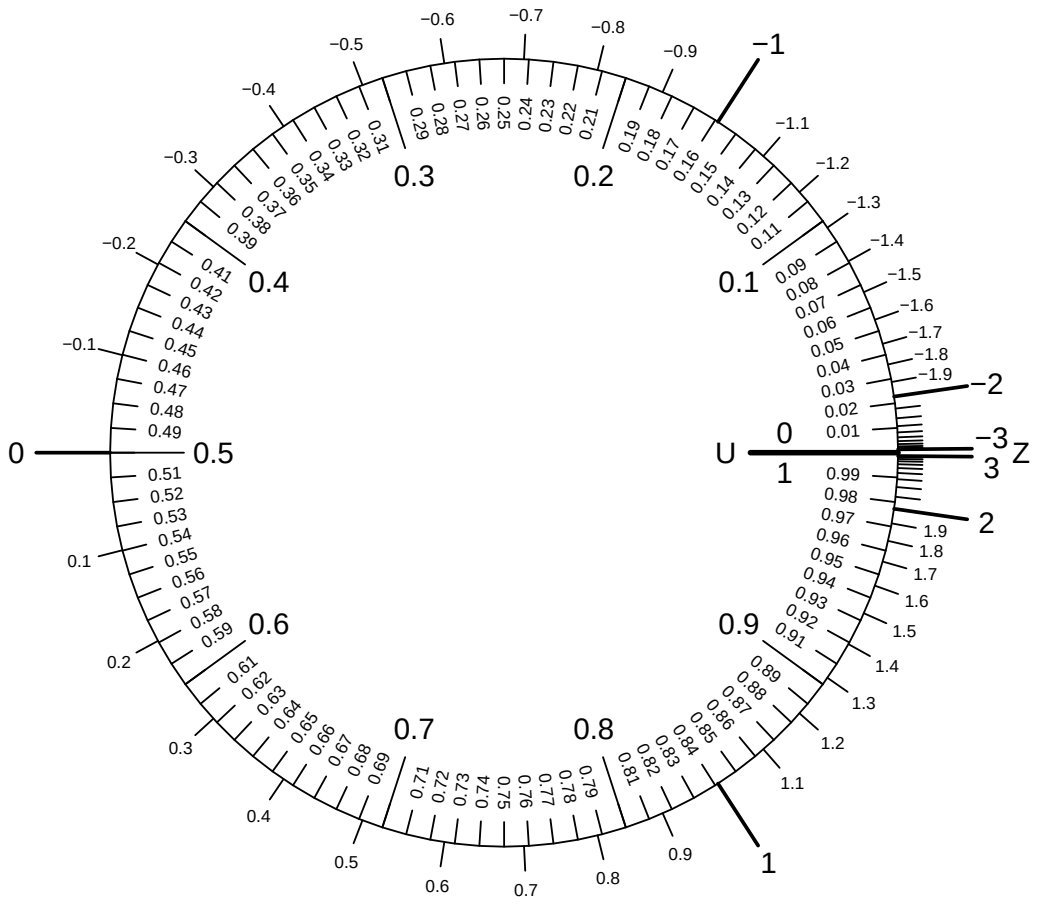
1. **Problem:**
   The spinner below has two distributions. The outer distribution (Z) is the standard normal distribution. The inner distribution (U) is the standard uniform distribution, which also corresponds to the percentile. To answer the questions below, assume the spinner is equally likely to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

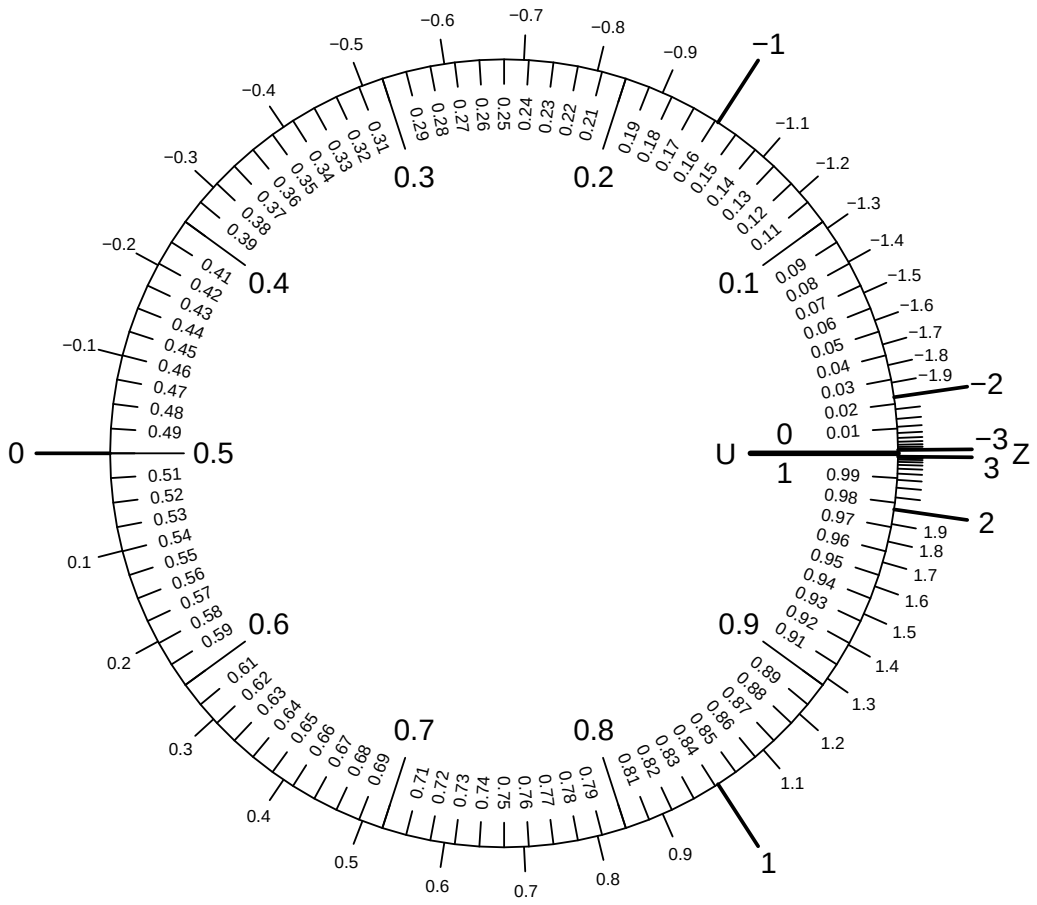
(f) $P(|Z| < 2) =$ 0.954

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

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

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

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

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

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

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

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

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

Solution:

(a) $z =$ 1.34

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

(c) $z =$ 0.39

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

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

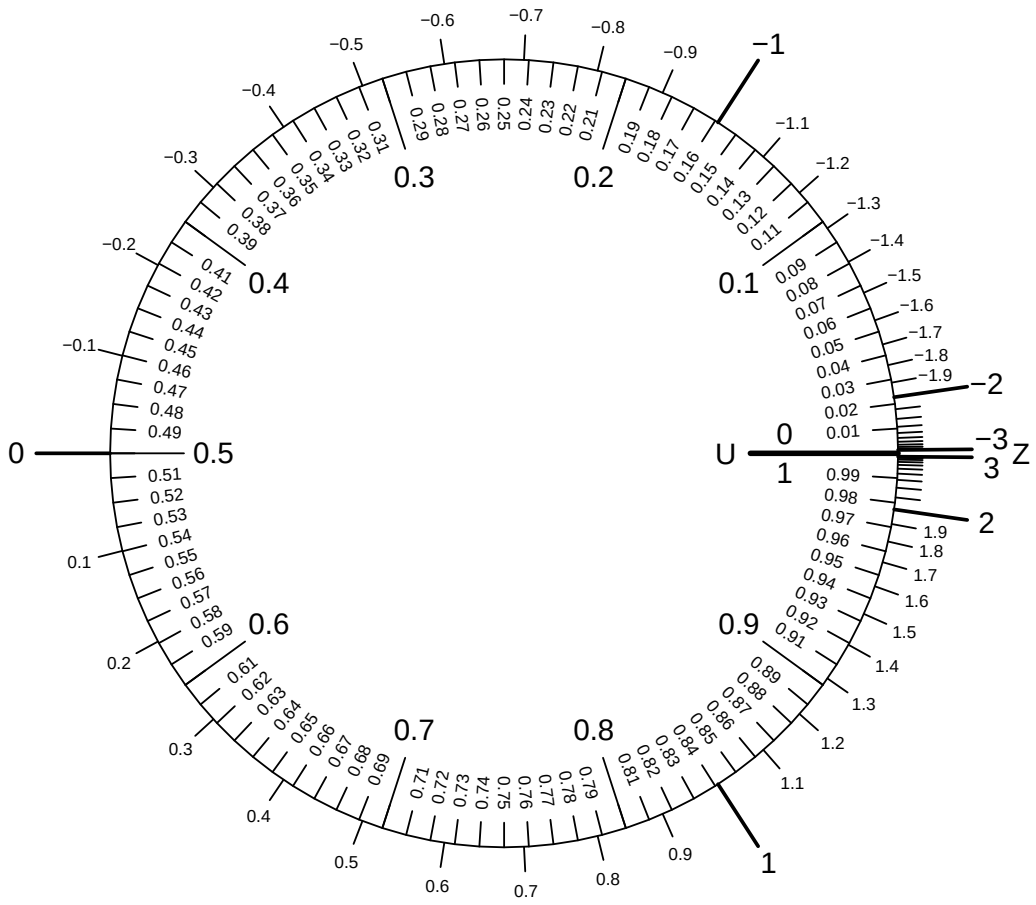
(f) $z =$ 0.84

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

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

(i) $z =$ 0.52

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) Evaluate $P(Z < 0.4)$

(b) Evaluate $P(|Z| < 1.1)$

(c) Determine z such that $P(Z < z) = 0.14$

(d) Determine z such that $P(|Z| > z) = 0.02$

(e) Determine z such that $P(|Z| < z) = 0.18$

(f) Evaluate $P(-1.3 < Z < 0.7)$

(g) Evaluate $P(Z > -0.3)$

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

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

Solution:

(a) $P(Z < 0.4)$ = 0.655

(b) $P(|Z| < 1.1)$ = 0.729

(c) z = -1.08

(d) z = 2.33

(e) z = 0.23

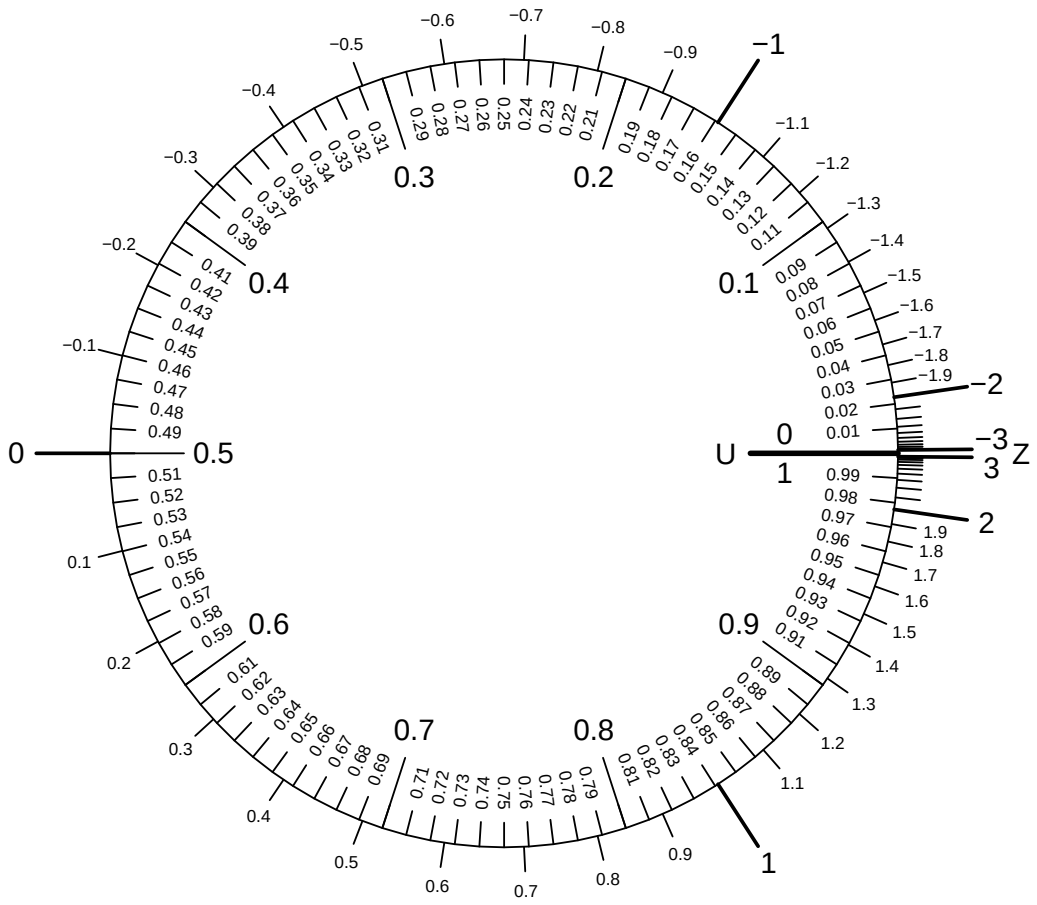
(f) $P(-1.3 < Z < 0.7)$ = 0.661

(g) $P(Z > -0.3)$ = 0.618

(h) z = -0.99

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

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 $P(-0.9 < Z < 0.9)$

(b) Determine z such that $P(|Z| > z) = 0.14$

(c) Evaluate $P(|Z| > 0.3)$

(d) Determine z such that $P(|Z| < z) = 0.28$

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

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

(g) Determine z such that $P(Z < z) = 0.16$

(h) Evaluate $P(Z > -0.8)$

(i) Determine z such that $P(Z > z) = 0.12$

Solution:

(a) $P(-0.9 < Z < 0.9)$ = 0.632

(b) z = 1.48

(c) $P(|Z| > 0.3)$ = 0.764

(d) z = 0.36

(e) $P(|Z| < 0.5)$ = 0.383

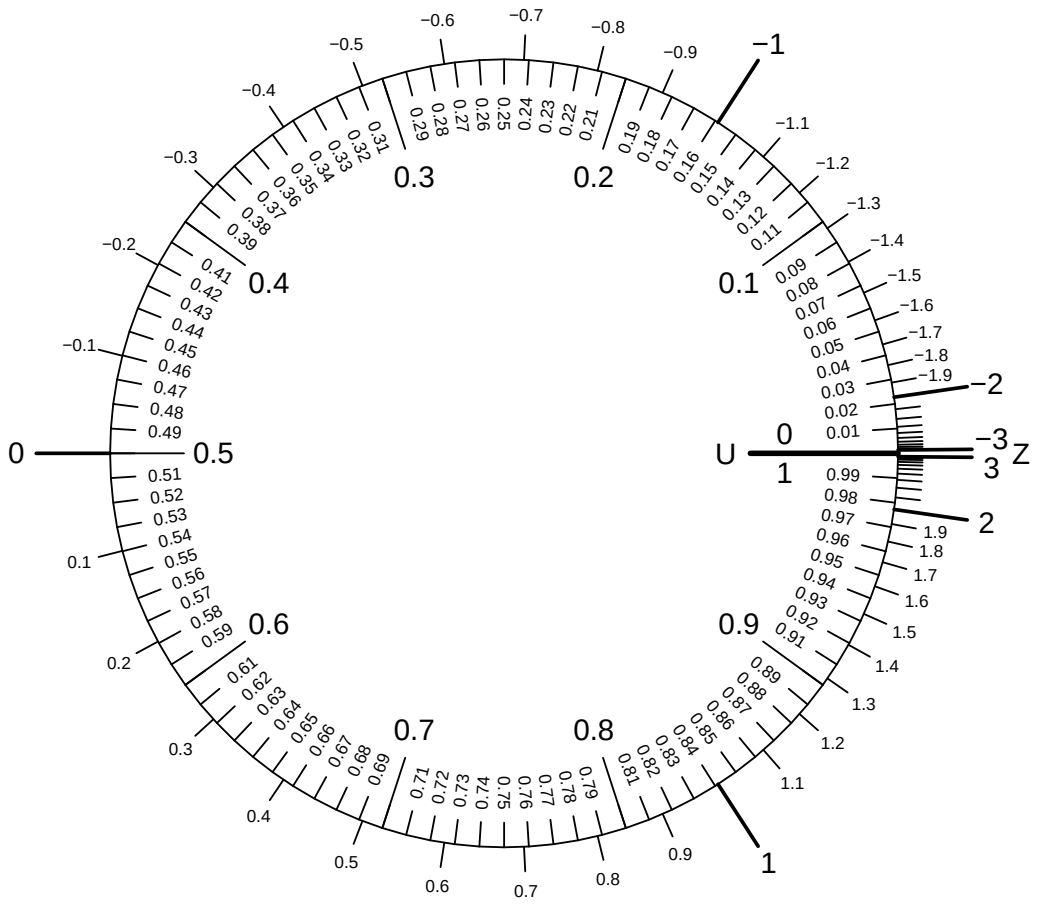
(f) $P(Z < 0.1)$ = 0.54

(g) z = -0.99

(h) $P(Z > -0.8)$ = 0.788

(i) z = 1.17

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 $P(|Z| > z) = 0.4$

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

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

(d) Determine z such that $P(Z < z) = 0.52$

(e) Determine z such that $P(Z > z) = 0.62$

(f) Evaluate $P(|Z| < 1.1)$

(g) Evaluate $P(Z < 1.4)$

(h) Evaluate $P(-0.9 < Z < 1.2)$

(i) Determine z such that $P(|Z| < z) = 0.2$

Solution:

(a) $z =$ 0.84

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

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

(d) $z =$ 0.05

(e) $z =$ -0.31

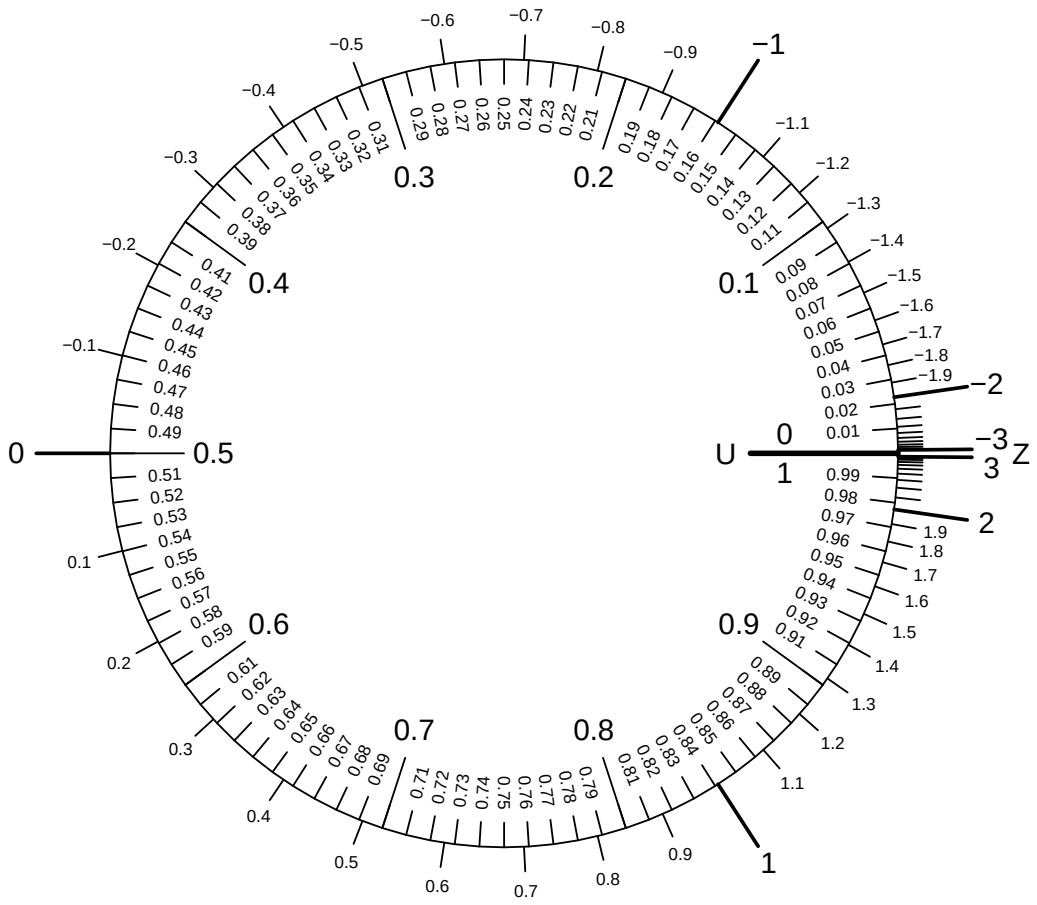
(f) $P(|Z| < 1.1) =$ 0.729

(g) $P(Z < 1.4) =$ 0.919

(h) $P(-0.9 < Z < 1.2) =$ 0.701

(i) $z =$ 0.25

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) Evaluate $P(0.2 < Z < 0.7)$

(b) Determine z such that $P(|Z| < z) = 0.7$

(c) Determine z such that $P(|Z| > z) = 0.48$

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

(e) Evaluate $P(|Z| < 0.3)$

(f) Evaluate $P(Z < 2.1)$

(g) Determine z such that $P(Z > z) = 0.51$

(h) Evaluate $P(|Z| > 0.9)$

(i) Determine z such that $P(Z < z) = 0.44$

Solution:

(a) $P(0.2 < Z < 0.7)$ = 0.179

(b) z = 1.04

(c) z = 0.71

(d) $P(Z > -0.4)$ = 0.655

(e) $P(|Z| < 0.3)$ = 0.236

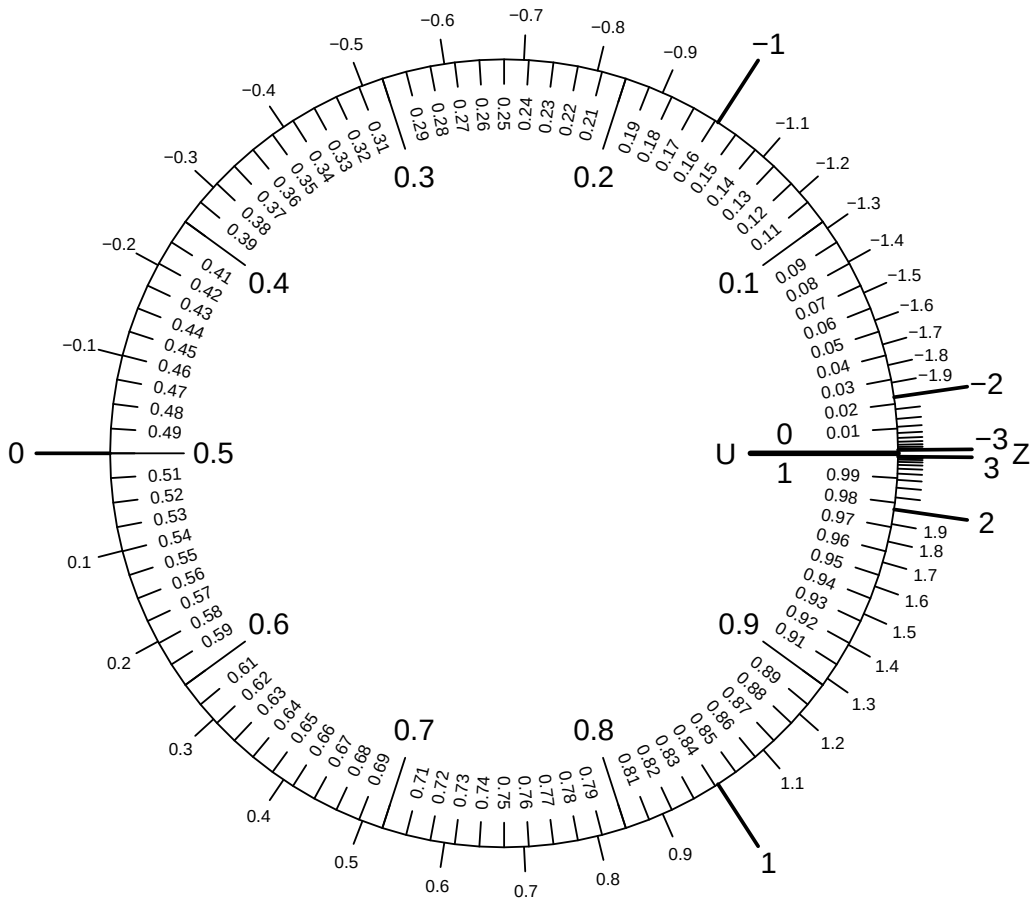
(f) $P(Z < 2.1)$ = 0.982

(g) z = -0.03

(h) $P(|Z| > 0.9)$ = 0.368

(i) z = -0.15

7. **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 $P(Z < z) = 0.59$

(b) Determine z such that $P(|Z| < z) = 0.32$

(c) Evaluate $P(-0.7 < Z < -0.6)$

(d) Evaluate $P(Z < -1.8)$

(e) Evaluate $P(|Z| > 1.6)$

(f) Evaluate $P(Z > -0.4)$

(g) Determine z such that $P(|Z| > z) = 0.66$

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

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

Solution:

(a) $z =$ 0.23

(b) $z =$ 0.41

(c) $P(-0.7 < Z < -0.6) =$ 0.032

(d) $P(Z < -1.8) =$ 0.036

(e) $P(|Z| > 1.6) =$ 0.11

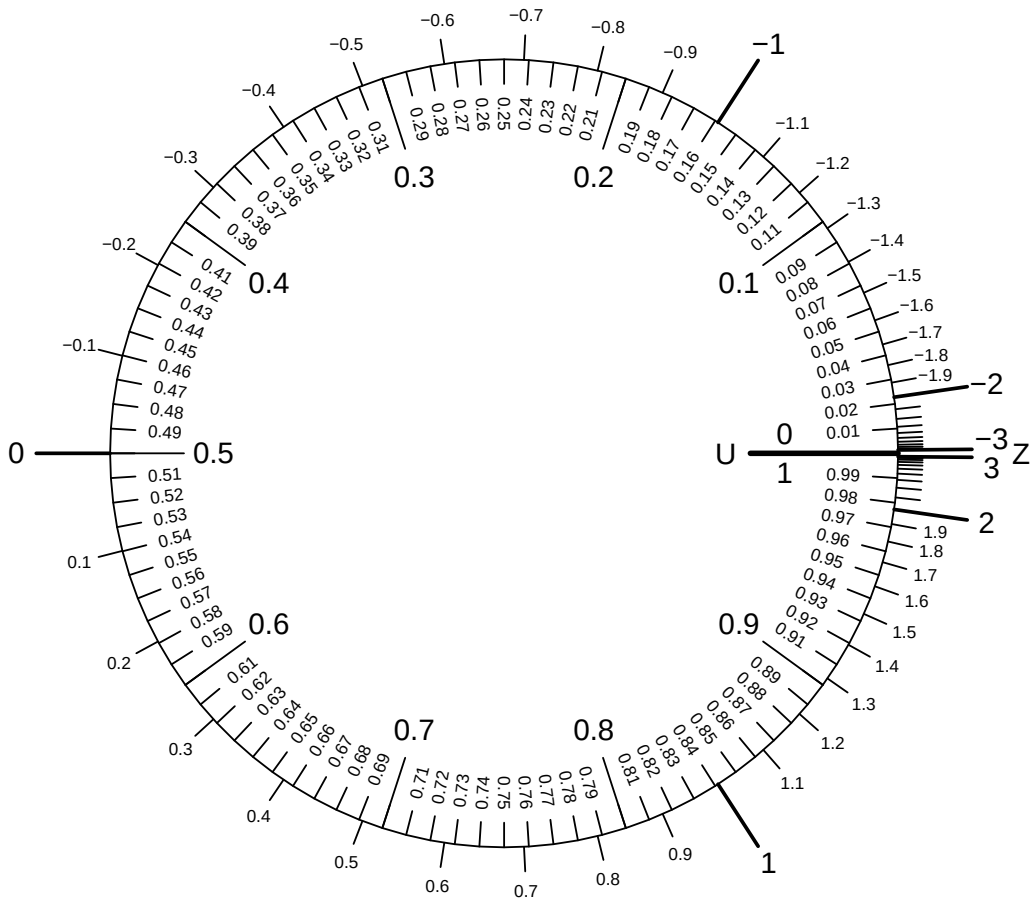
(f) $P(Z > -0.4) =$ 0.655

(g) $z =$ 0.44

(h) $z =$ -0.92

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

8. **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 $P(Z > 0.6)$

(b) Determine z such that $P(|Z| > z) = 0.94$

(c) Evaluate $P(-0.2 < Z < 0.3)$

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

(e) Determine z such that $P(Z > z) = 0.5$

(f) Evaluate $P(|Z| < 1.1)$

(g) Determine z such that $P(|Z| < z) = 0.04$

(h) Evaluate $P(|Z| > 0.9)$

(i) Determine z such that $P(Z < z) = 0.34$

Solution:

(a) $P(Z > 0.6)$ = 0.274

(b) z = 0.08

(c) $P(-0.2 < Z < 0.3)$ = 0.197

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

(e) z = 0

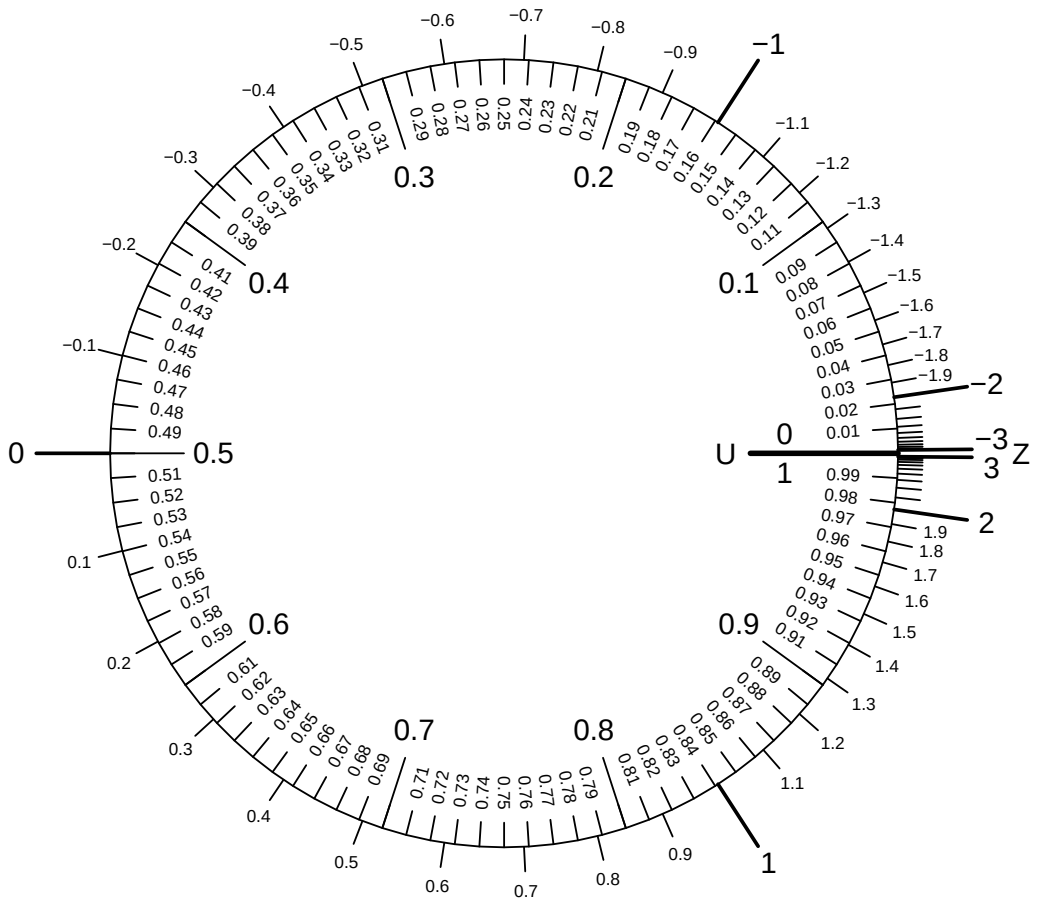
(f) $P(|Z| < 1.1)$ = 0.729

(g) z = 0.05

(h) $P(|Z| > 0.9)$ = 0.368

(i) z = -0.41

9. **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 $P(Z > 0)$

(b) Determine z such that $P(Z > z) = 0.05$

(c) Determine z such that $P(|Z| > z) = 0.22$

(d) Evaluate $P(Z < -0.2)$

(e) Evaluate $P(|Z| > 0.8)$

(f) Evaluate $P(-1.3 < Z < -0.7)$

(g) Determine z such that $P(|Z| < z) = 0.86$

(h) Evaluate $P(|Z| < 0.2)$

(i) Determine z such that $P(Z < z) = 0.74$

Solution:

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

(b) $z =$ 1.64

(c) $z =$ 1.23

(d) $P(Z < -0.2) =$ 0.421

(e) $P(|Z| > 0.8) =$ 0.424

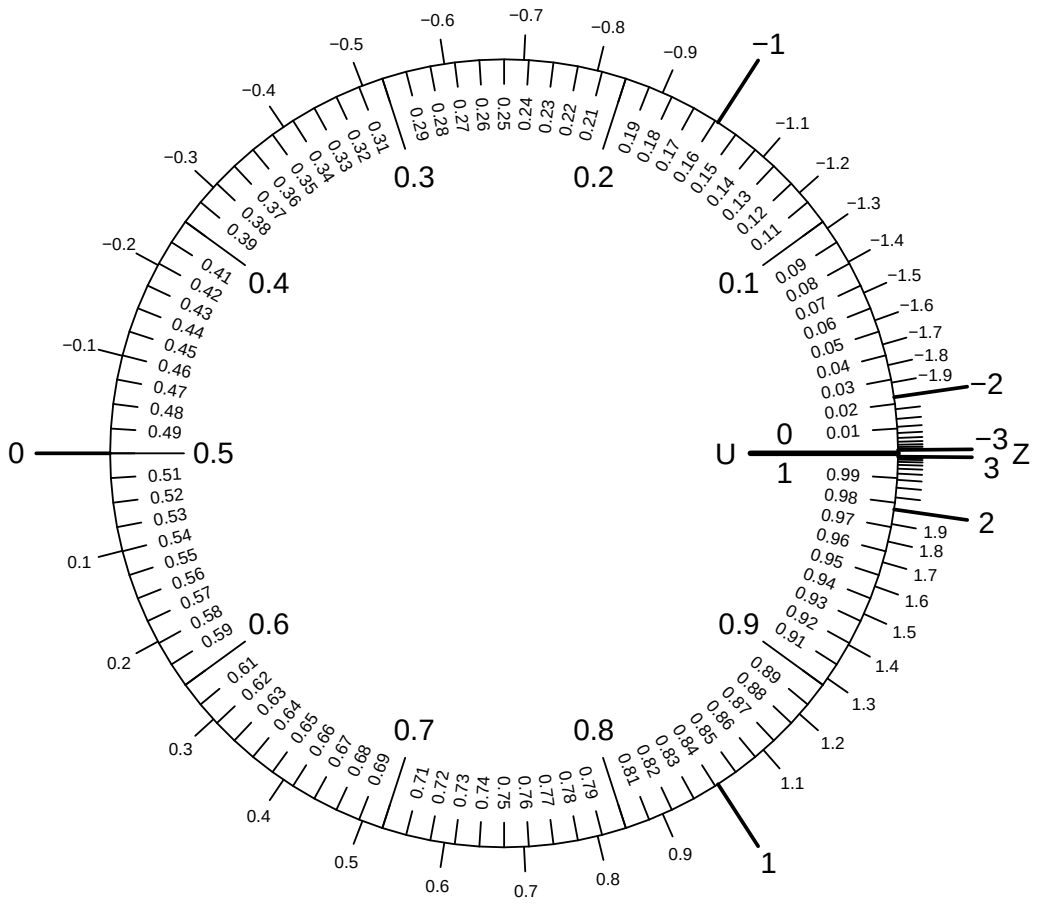
(f) $P(-1.3 < Z < -0.7) =$ 0.145

(g) $z =$ 1.48

(h) $P(|Z| < 0.2) =$ 0.159

(i) $z =$ 0.64

10. **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 $P(|Z| < 0.4)$

(b) Evaluate $P(Z > -0.1)$

(c) Evaluate $P(|Z| > 0.7)$

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

(e) Determine z such that $P(Z > z) = 0.04$

(f) Evaluate $P(-0.5 < Z < 2.1)$

(g) Determine z such that $P(|Z| < z) = 0.16$

(h) Determine z such that $P(Z < z) = 0.59$

(i) Determine z such that $P(|Z| > z) = 0.48$

Solution:

(a) $P(|Z| < 0.4) =$ 0.311

(b) $P(Z > -0.1) =$ 0.54

(c) $P(|Z| > 0.7) =$ 0.484

(d) $P(Z < 0.4) =$ 0.655

(e) $z =$ 1.75

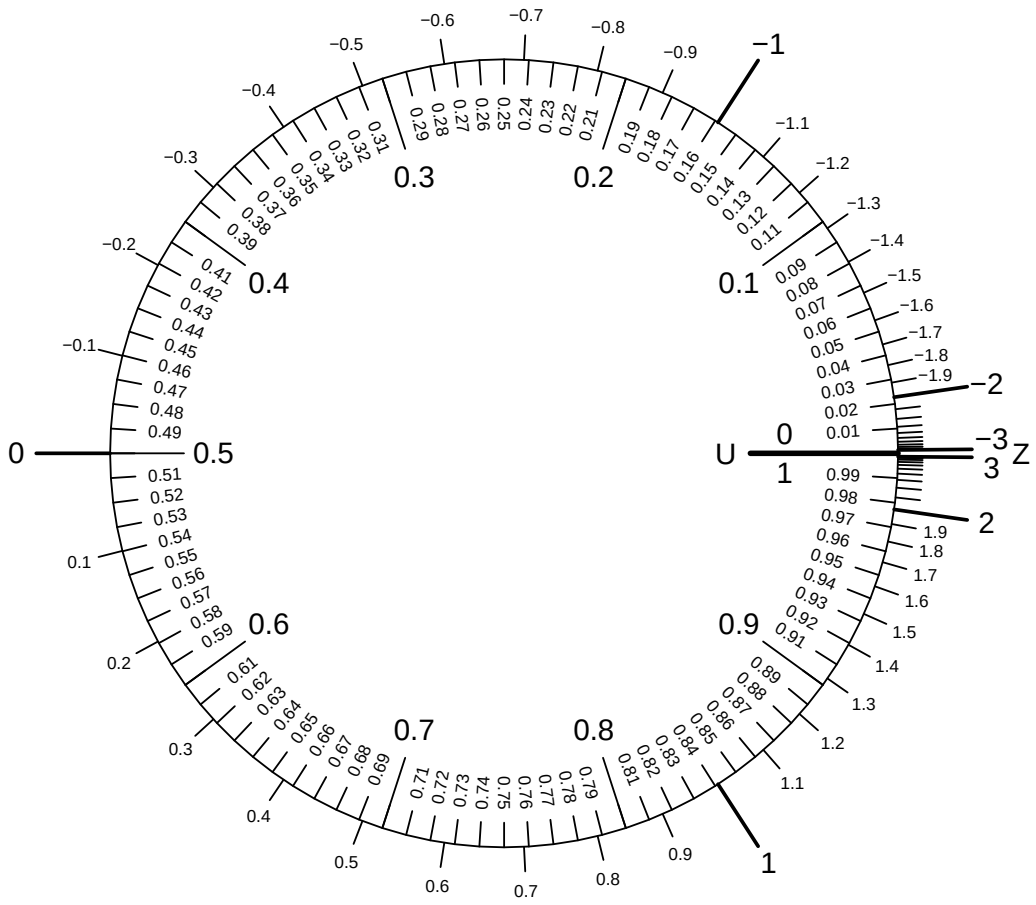
(f) $P(-0.5 < Z < 2.1) =$ 0.673

(g) $z =$ 0.2

(h) $z =$ 0.23

(i) $z =$ 0.71

11. **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 $P(|Z| > z) = 0.68$

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

(c) Evaluate $P(Z < -1.5)$

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

(e) Determine z such that $P(Z < z) = 0.28$

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

(g) Evaluate $P(-1.7 < Z < 0.1)$

(h) Determine z such that $P(Z > z) = 0.74$

(i) Determine z such that $P(|Z| < z) = 0.38$

Solution:

(a) $z =$ 0.41

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

(c) $P(Z < -1.5) =$ 0.067

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

(e) $z =$ -0.58

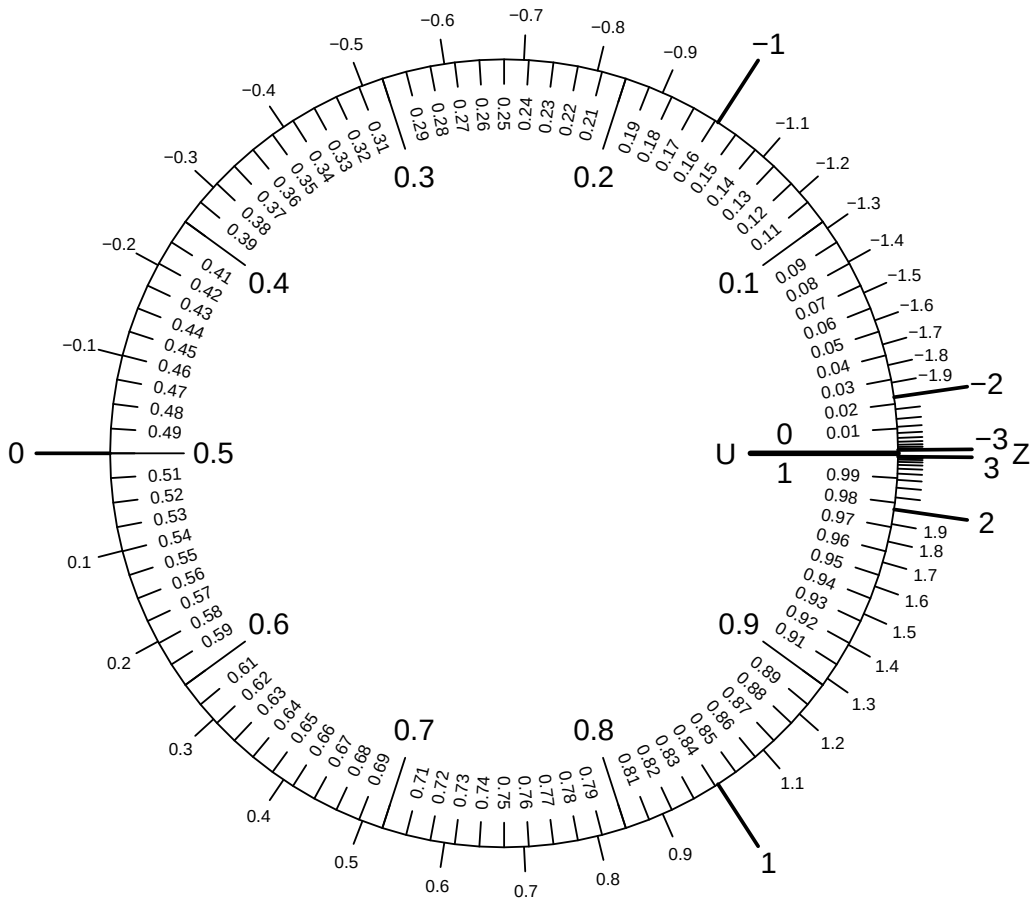
(f) $P(Z > 0) =$ 0.5

(g) $P(-1.7 < Z < 0.1) =$ 0.495

(h) $z =$ -0.64

(i) $z =$ 0.5

12. **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 $P(Z < z) = 0.39$

(c) Determine z such that $P(Z > z) = 0.17$

(d) Evaluate $P(|Z| > 1)$

(e) Evaluate $P(Z > 1.3)$

(f) Evaluate $P(-0.3 < Z < 0.3)$

(g) Determine z such that $P(|Z| < z) = 0.16$

(h) Determine z such that $P(|Z| > z) = 0.68$

(i) Evaluate $P(Z < -2)$

Solution:

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

(b) z = -0.28

(c) z = 0.95

(d) $P(|Z| > 1)$ = 0.317

(e) $P(Z > 1.3)$ = 0.097

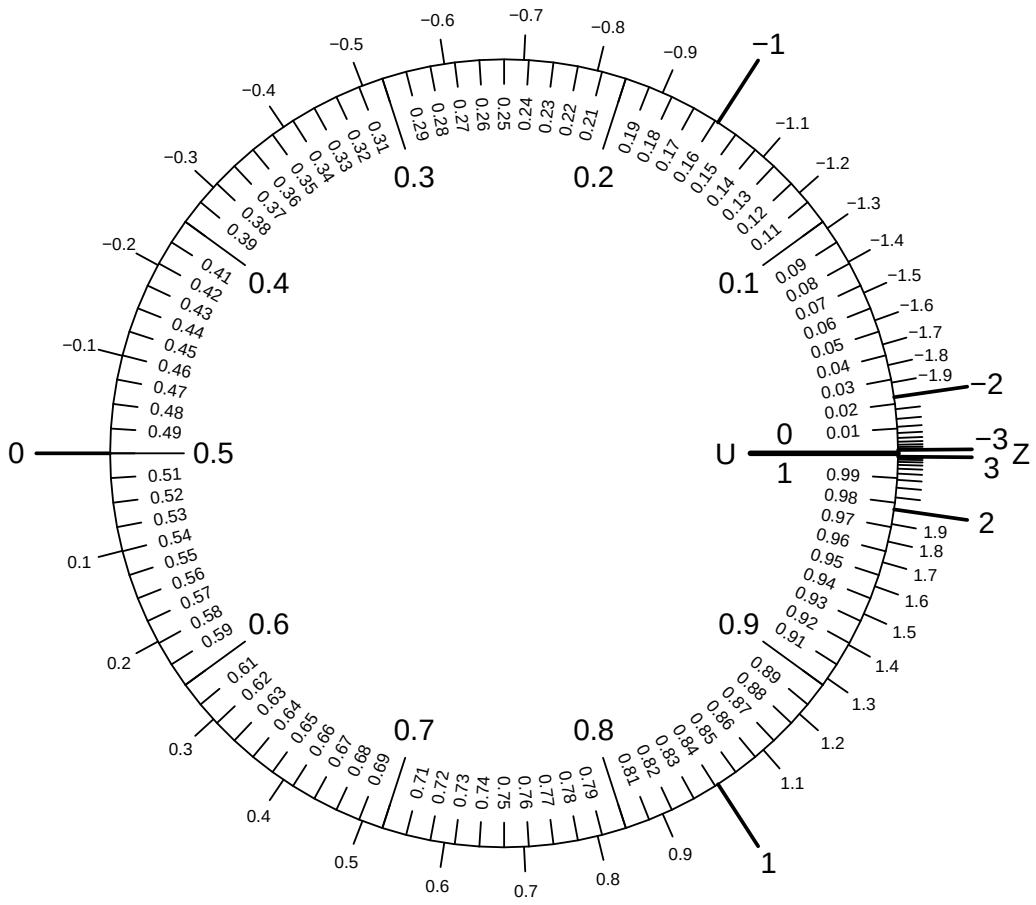
(f) $P(-0.3 < Z < 0.3)$ = 0.236

(g) z = 0.2

(h) z = 0.41

(i) $P(Z < -2)$ = 0.023

13. **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 $P(|Z| > 1.1)$

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

(c) Evaluate $P(Z > -0.4)$

(d) Evaluate $P(|Z| < 1.9)$

(e) Evaluate $P(-1.3 < Z < 1)$

(f) Determine z such that $P(|Z| > z) = 0.8$

(g) Determine z such that $P(|Z| < z) = 0.06$

(h) Determine z such that $P(Z < z) = 0.27$

(i) Determine z such that $P(Z > z) = 0.13$

Solution:

(a) $P(|Z| > 1.1) =$ 0.271

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

(c) $P(Z > -0.4) =$ 0.655

(d) $P(|Z| < 1.9) =$ 0.943

(e) $P(-1.3 < Z < 1) =$ 0.744

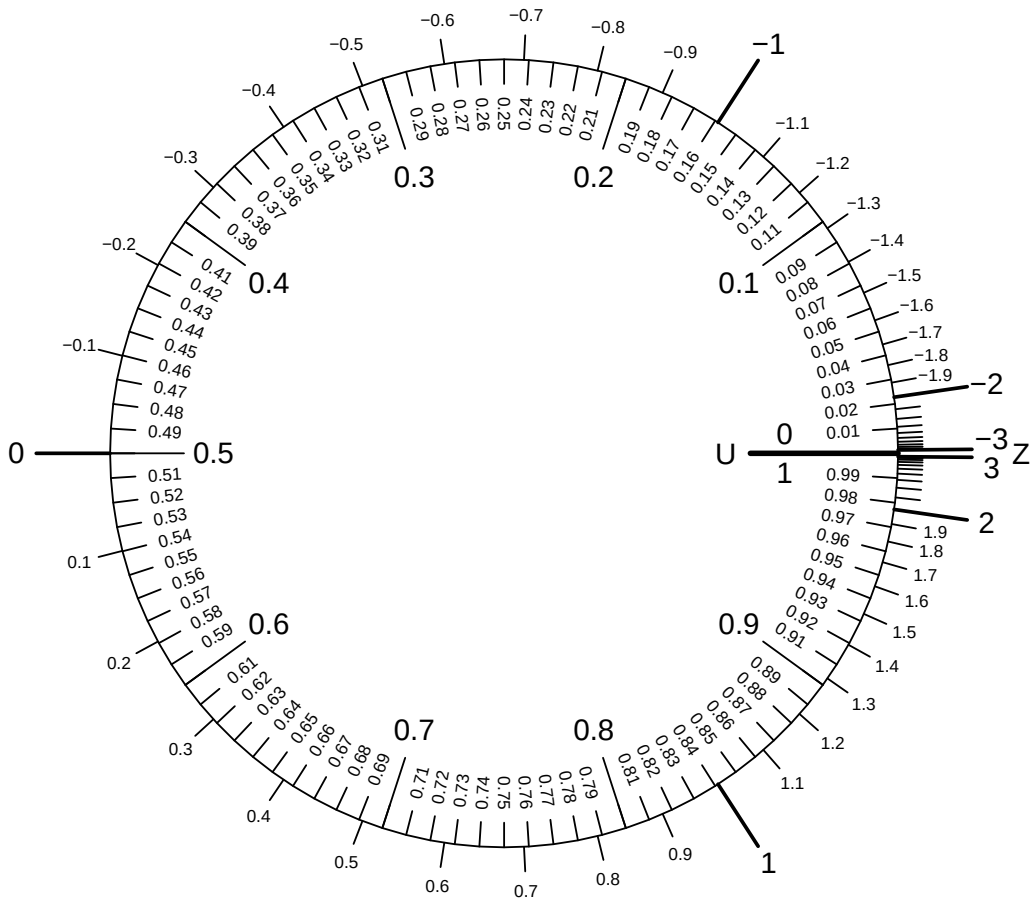
(f) $z =$ 0.25

(g) $z =$ 0.08

(h) $z =$ -0.61

(i) $z =$ 1.13

14. **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 $P(|Z| < 0.6)$

(b) Determine z such that $P(Z > z) = 0.1$

(c) Evaluate $P(Z > 0.5)$

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

(e) Determine z such that $P(|Z| < z) = 0.38$

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

(g) Evaluate $P(-1.1 < Z < 1.3)$

(h) Determine z such that $P(Z < z) = 0.98$

(i) Determine z such that $P(|Z| > z) = 0.9$

Solution:

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

(b) $z =$ 1.28

(c) $P(Z > 0.5) =$ 0.309

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

(e) $z =$ 0.5

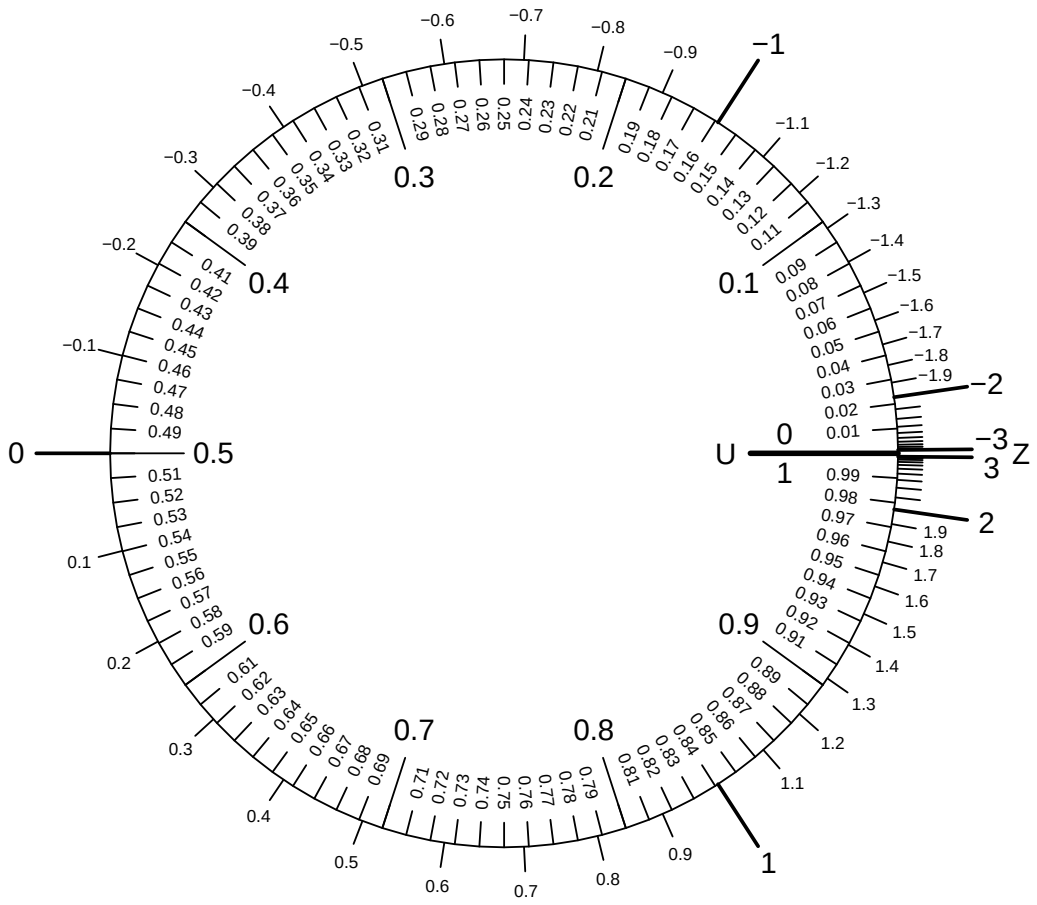
(f) $P(|Z| > 1.6) =$ 0.11

(g) $P(-1.1 < Z < 1.3) =$ 0.767

(h) $z =$ 2.05

(i) $z =$ 0.13

15. **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 $P(0.2 < Z < 1.2)$

(b) Evaluate $P(|Z| > 0.9)$

(c) Determine z such that $P(|Z| > z) = 0.56$

(d) Evaluate $P(Z > 1.3)$

(e) Determine z such that $P(|Z| < z) = 0.36$

(f) Determine z such that $P(Z < z) = 0.35$

(g) Evaluate $P(Z < 0.4)$

(h) Evaluate $P(|Z| < 0.3)$

(i) Determine z such that $P(Z > z) = 0.98$

Solution:

(a) $P(0.2 < Z < 1.2)$ = 0.306

(b) $P(|Z| > 0.9)$ = 0.368

(c) z = 0.58

(d) $P(Z > 1.3)$ = 0.097

(e) z = 0.47

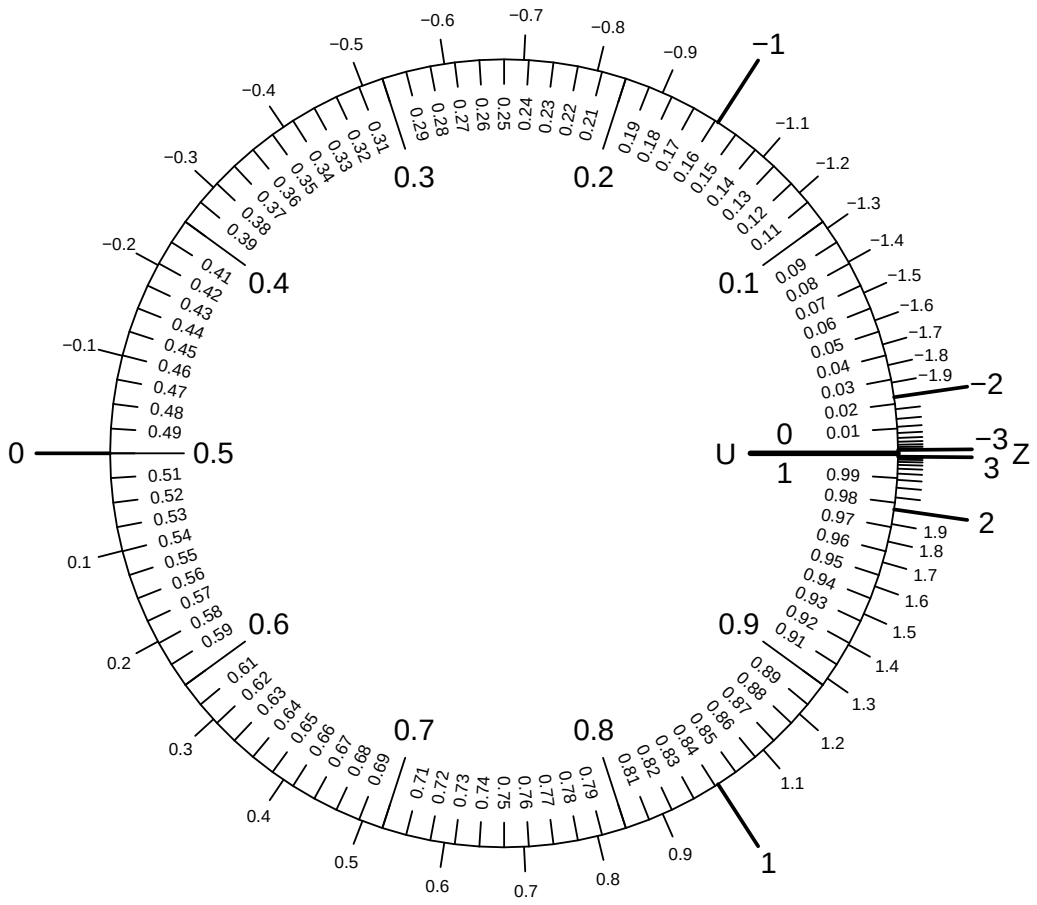
(f) z = -0.39

(g) $P(Z < 0.4)$ = 0.655

(h) $P(|Z| < 0.3)$ = 0.236

(i) z = -2.05

16. **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 $P(Z > z) = 0.93$

(b) Evaluate $P(|Z| > 0.5)$

(c) Determine z such that $P(Z < z) = 0.54$

(d) Evaluate $P(-1.1 < Z < 1.2)$

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

(f) Evaluate $P(Z > 0.9)$

(g) Determine z such that $P(|Z| > z) = 0.32$

(h) Determine z such that $P(|Z| < z) = 0.62$

(i) Evaluate $P(|Z| < 0.3)$

Solution:

(a) $z =$ -1.48

(b) $P(|Z| > 0.5) =$ 0.617

(c) $z =$ 0.1

(d) $P(-1.1 < Z < 1.2) =$ 0.749

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

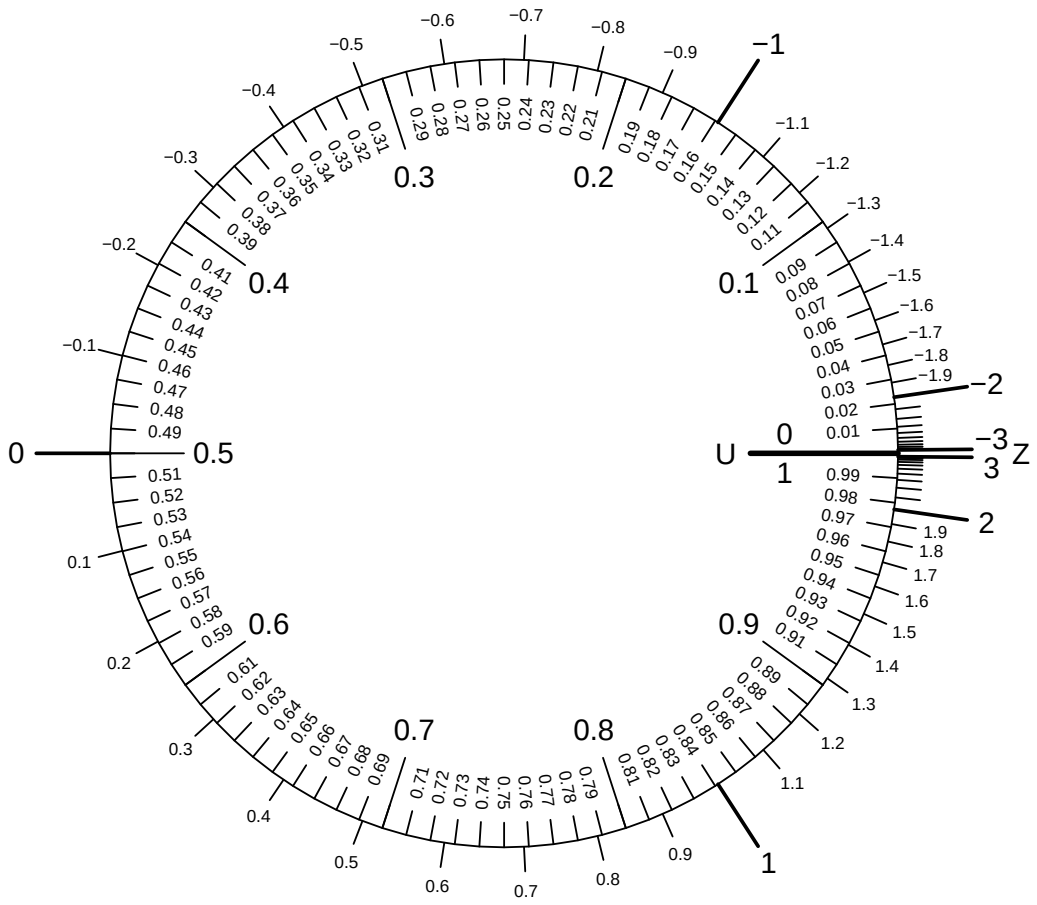
(f) $P(Z > 0.9) =$ 0.184

(g) $z =$ 0.99

(h) $z =$ 0.88

(i) $P(|Z| < 0.3) =$ 0.236

17. **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 $P(|Z| < z) = 0.62$

(c) Evaluate $P(0.1 < Z < 1.4)$

(d) Evaluate $P(Z < -1)$

(e) Determine z such that $P(Z < z) = 0.85$

(f) Evaluate $P(Z > 1.1)$

(g) Determine z such that $P(Z > z) = 0.2$

(h) Evaluate $P(|Z| > 1.7)$

(i) Determine z such that $P(|Z| > z) = 0.76$

Solution:

(a) $P(|Z| < 0.1) =$ $\boxed{0.08}$

(b) $z =$ $\boxed{0.88}$

(c) $P(0.1 < Z < 1.4) =$ $\boxed{0.379}$

(d) $P(Z < -1) =$ $\boxed{0.159}$

(e) $z =$ $\boxed{1.04}$

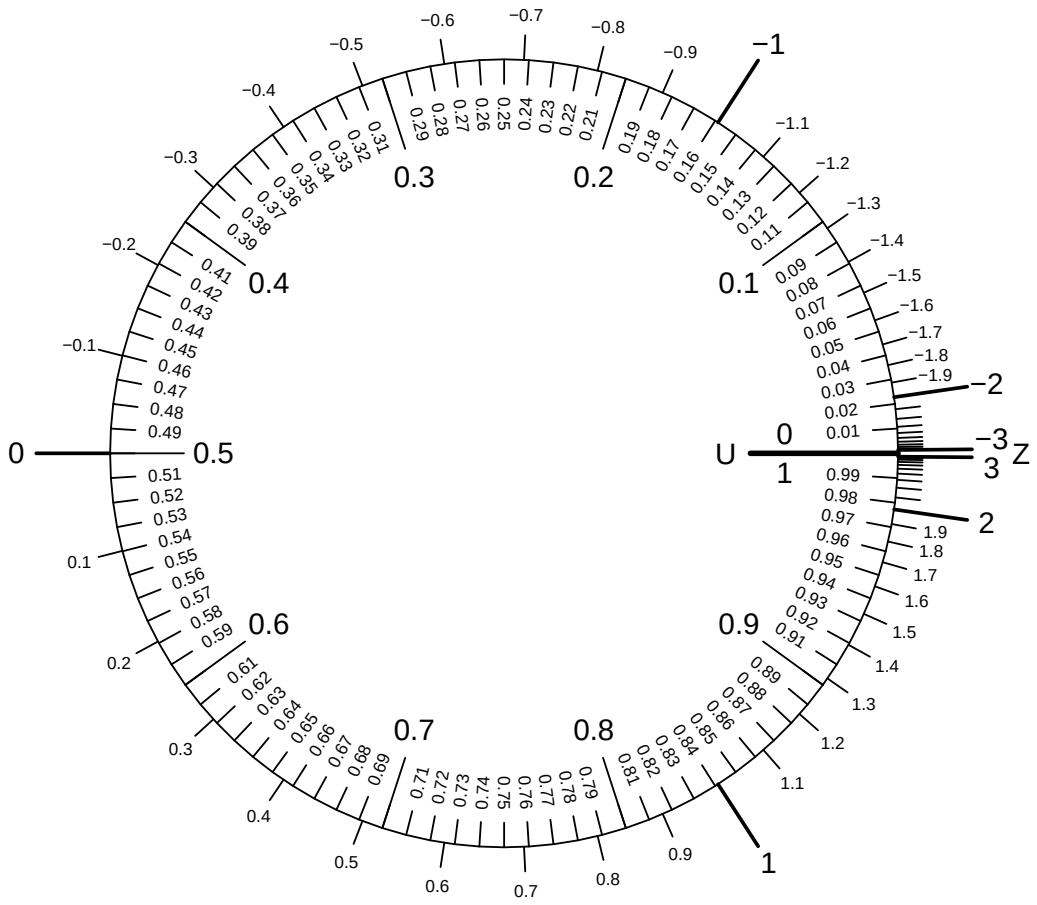
(f) $P(Z > 1.1) =$ $\boxed{0.136}$

(g) $z =$ $\boxed{0.84}$

(h) $P(|Z| > 1.7) =$ $\boxed{0.089}$

(i) $z =$ $\boxed{0.31}$

18. **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 $P(Z > -1.3)$

(b) Evaluate $P(-1.9 < Z < 0.3)$

(c) Evaluate $P(|Z| < 1.7)$

(d) Determine z such that $P(Z < z) = 0.95$

(e) Determine z such that $P(Z > z) = 0.44$

(f) Evaluate $P(|Z| > 0.6)$

(g) Determine z such that $P(|Z| < z) = 0.7$

(h) Determine z such that $P(|Z| > z) = 0.56$

(i) Evaluate $P(Z < 0.7)$

Solution:

(a) $P(Z > -1.3) =$ 0.903

(b) $P(-1.9 < Z < 0.3) =$ 0.589

(c) $P(|Z| < 1.7) =$ 0.911

(d) $z =$ 1.64

(e) $z =$ 0.15

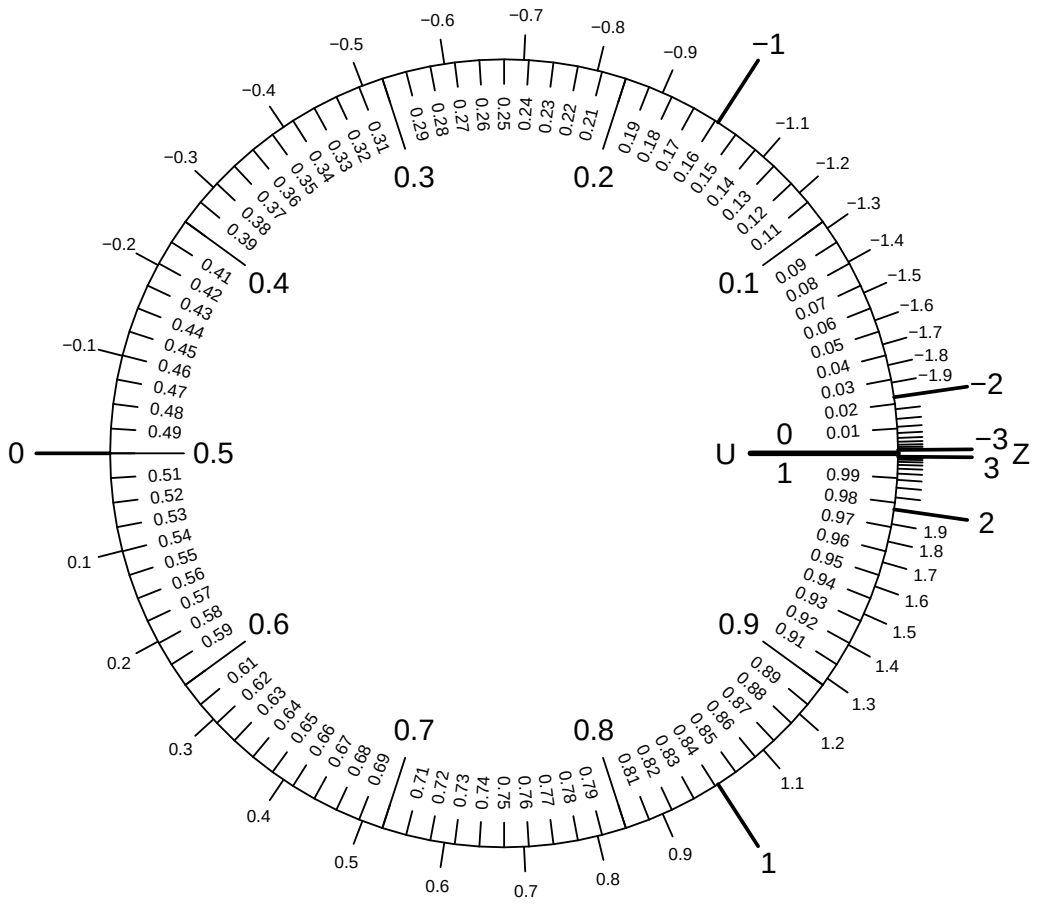
(f) $P(|Z| > 0.6) =$ 0.549

(g) $z =$ 1.04

(h) $z =$ 0.58

(i) $P(Z < 0.7) =$ 0.758

19. **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 $P(|Z| < 1.1)$

(b) Determine z such that $P(|Z| < z) = 0.86$

(c) Determine z such that $P(Z > z) = 0.85$

(d) Evaluate $P(-0.3 < Z < -0.2)$

(e) Evaluate $P(Z > -0.6)$

(f) Determine z such that $P(Z < z) = 0.73$

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

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

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

Solution:

(a) $P(|Z| < 1.1) =$ 0.729

(b) $z =$ 1.48

(c) $z =$ -1.04

(d) $P(-0.3 < Z < -0.2) =$ 0.039

(e) $P(Z > -0.6) =$ 0.726

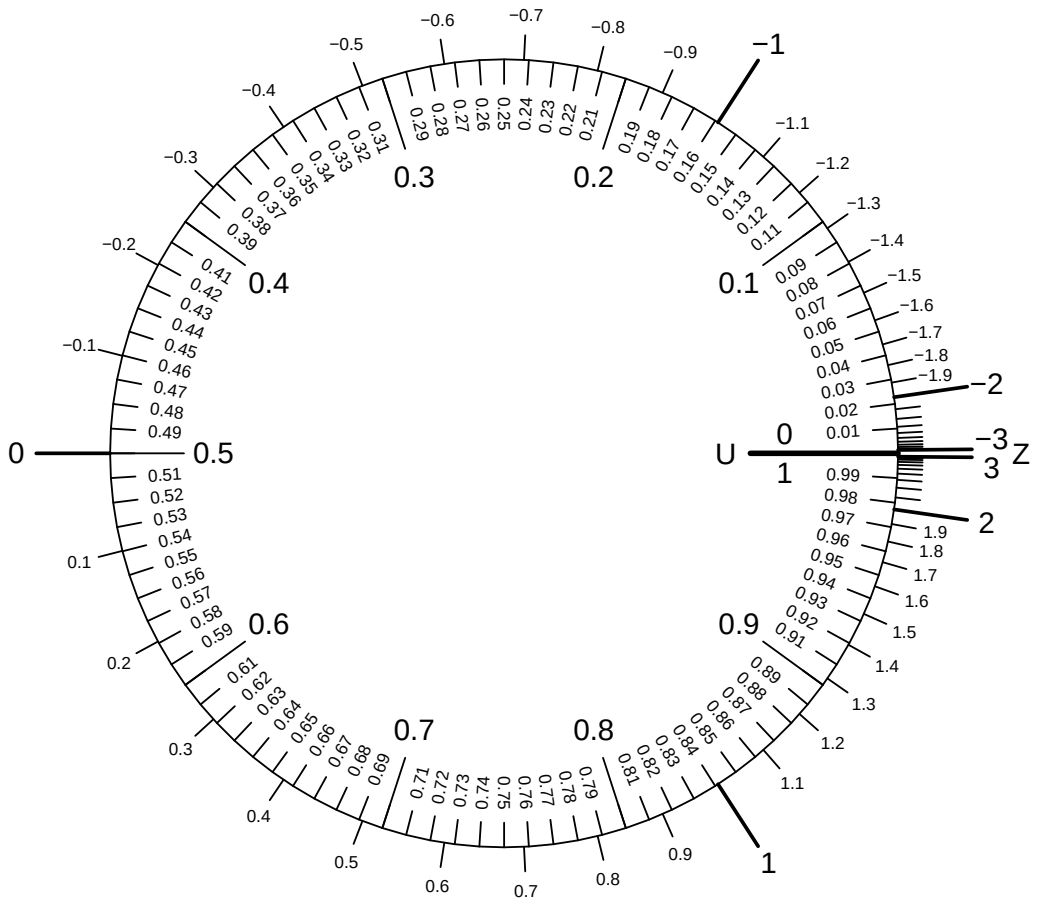
(f) $z =$ 0.61

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

(h) $z =$ 0.39

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

20. **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 $P(Z > 0.5)$

(b) Determine z such that $P(|Z| > z) = 0.32$

(c) Determine z such that $P(Z > z) = 0.9$

(d) Evaluate $P(|Z| < 0.9)$

(e) Evaluate $P(Z < 0)$

(f) Evaluate $P(-0.3 < Z < -0.2)$

(g) Determine z such that $P(Z < z) = 0.78$

(h) Evaluate $P(|Z| > 1)$

(i) Determine z such that $P(|Z| < z) = 0.24$

Solution:

(a) $P(Z > 0.5)$ = 0.309

(b) z = 0.99

(c) z = -1.28

(d) $P(|Z| < 0.9)$ = 0.632

(e) $P(Z < 0)$ = 0.5

(f) $P(-0.3 < Z < -0.2)$ = 0.039

(g) z = 0.77

(h) $P(|Z| > 1)$ = 0.317

(i) z = 0.31