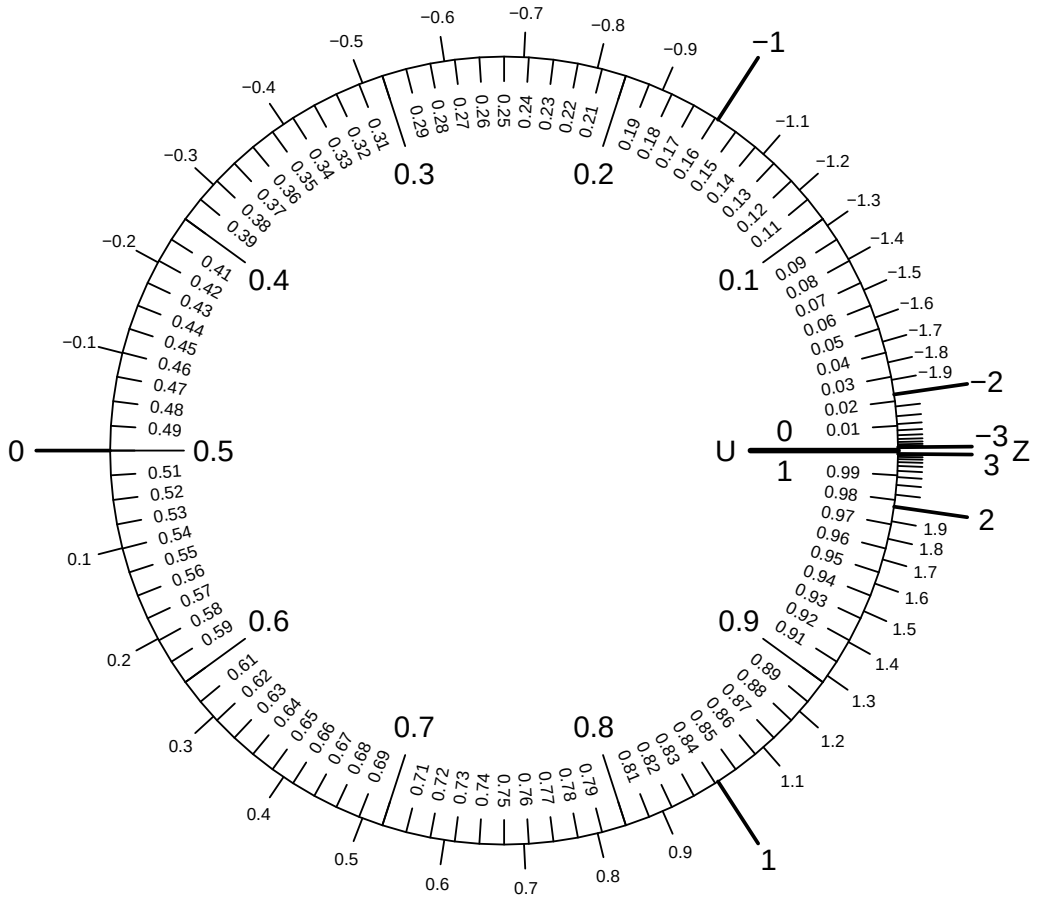
1. **Problem:**
   The spinner below has two distributions. The outer distribution (Z) is the standard normal distribution. The inner distribution (U) is the standard uniform distribution, which also corresponds to the percentile. To answer the questions below, assume the spinner is equally likely to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



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

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

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

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

(e) Evaluate $P(-1.4 < Z < 0.4)$

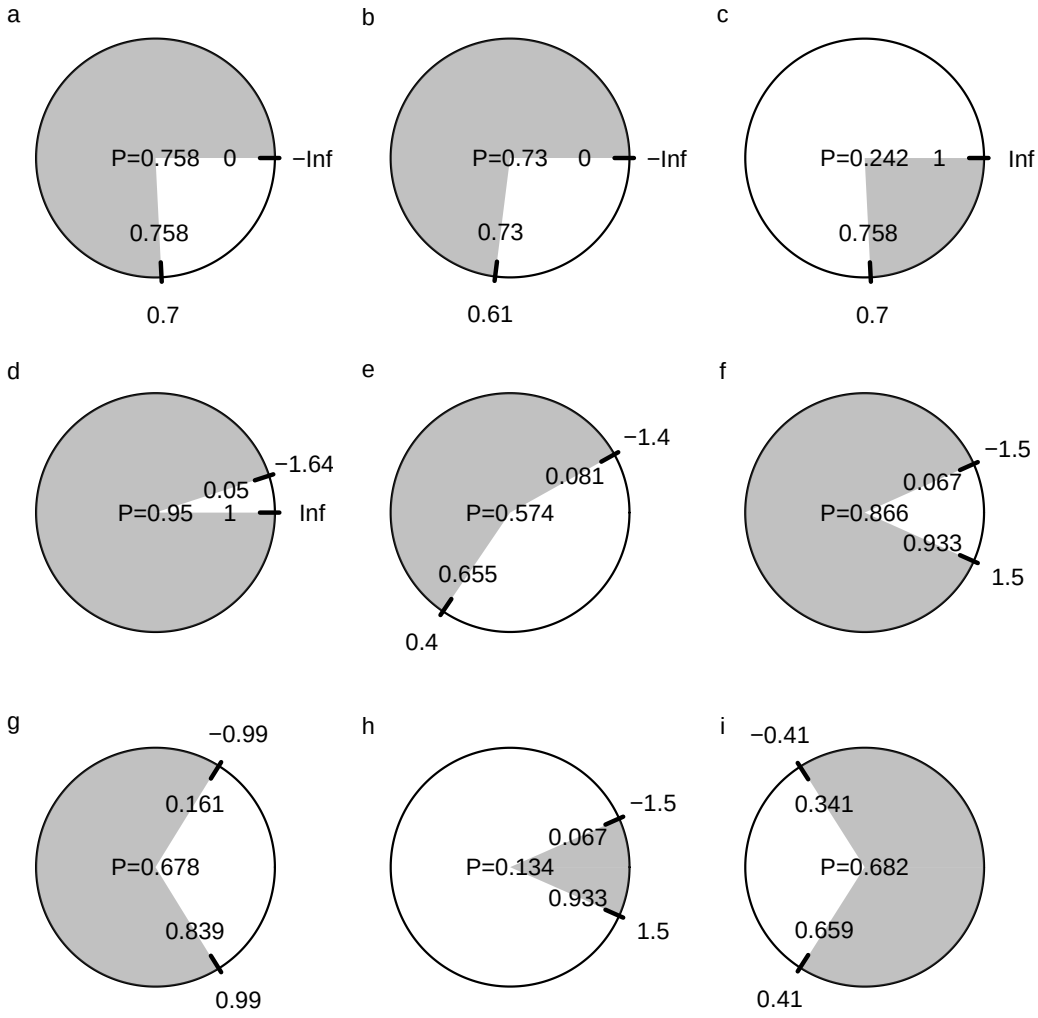
(f) Evaluate $P(|Z| < 1.5)$

(g) Determine z such that $P(|Z| < z) = 0.68$

(h) Evaluate $P(|Z| > 1.5)$

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

Solution: The following circles are meant to help visualize how to get the answers.



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

(b) $z =$ 0.61

(c) $P(Z > 0.7) =$ 0.242

(d) $z =$ -1.64

(e) $P(-1.4 < Z < 0.4) =$ 0.574

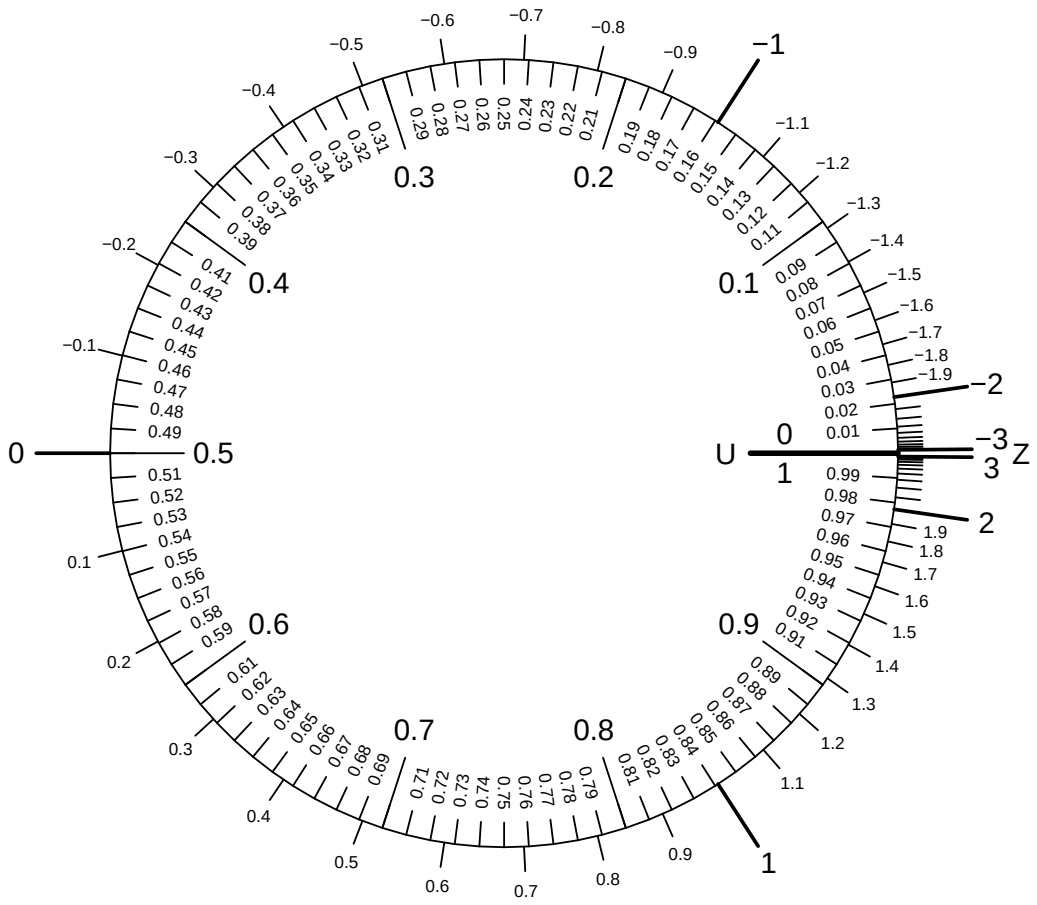
(f) $P(|Z| < 1.5) =$ 0.866

(g) $z =$ 0.99

(h) $P(|Z| > 1.5) =$ 0.134

(i) $z =$ 0.41

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 $P(Z < 0.1)$

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

(c) Evaluate $P(Z > 0.2)$

(d) Determine z such that $P(Z > z) = 0.42$

(e) Evaluate $P(-2.3 < Z < -0.1)$

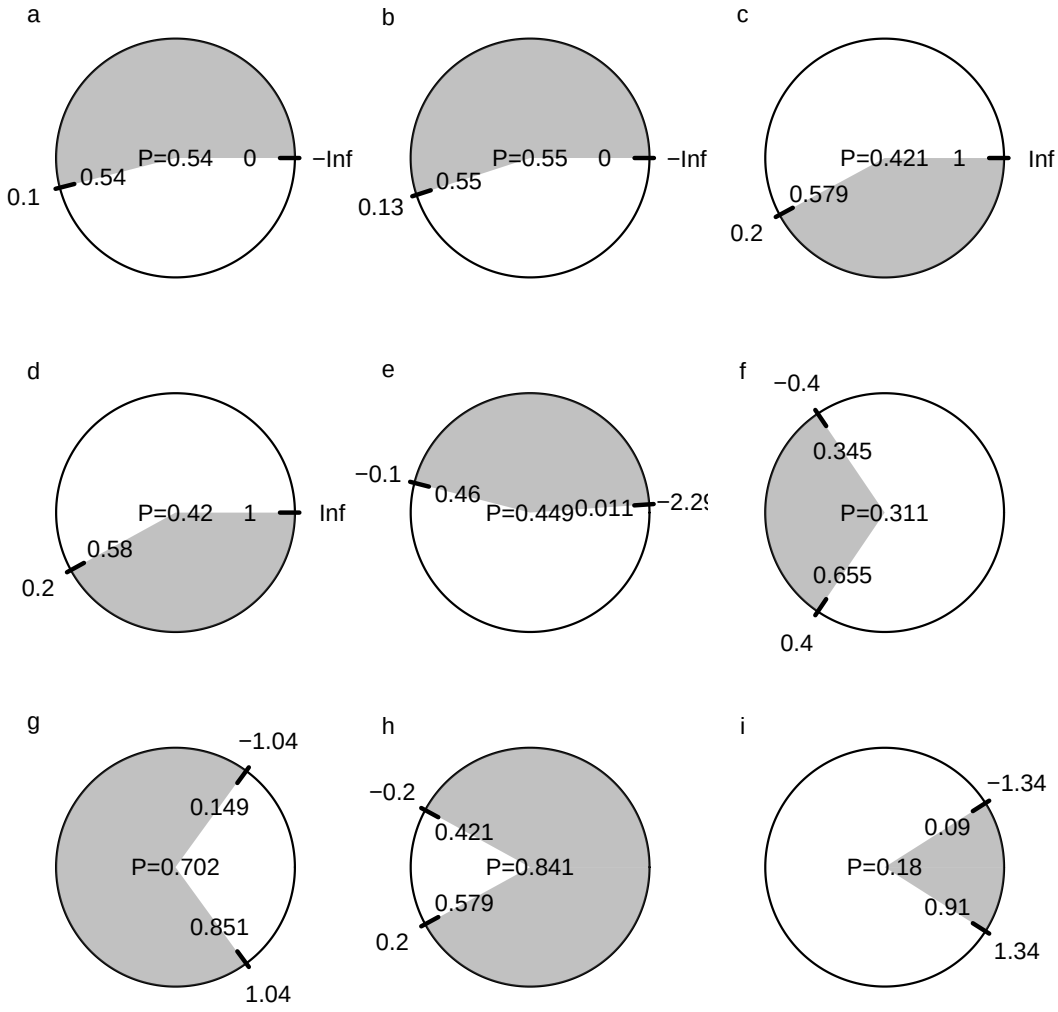
(f) Evaluate $P(|Z| < 0.4)$

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

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

(i) Determine z such that $P(|Z| > z) = 0.18$

Solution: The following circles are meant to help visualize how to get the answers.



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

(b) $z =$ 0.13

(c) $P(Z > 0.2) =$ 0.421

(d) $z =$ 0.2

(e) $P(-2.3 < Z < -0.1) =$ 0.449

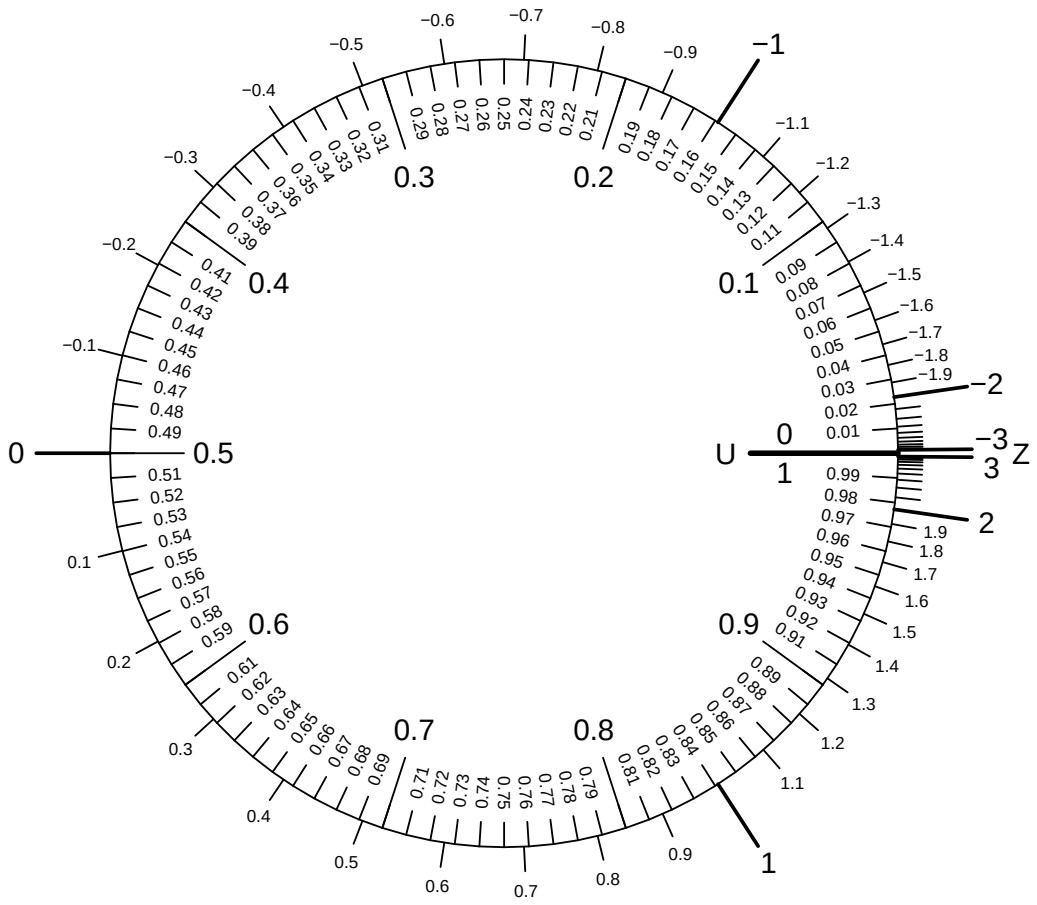
(f) $P(|Z| < 0.4) =$ 0.311

(g) $z =$ 1.04

(h) $P(|Z| > 0.2) =$ 0.841

(i) $z =$ 1.34

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 $P(|Z| < 1)$

(b) Evaluate $P(Z > 0.3)$

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

(d) Evaluate $P(-0.3 < Z < 0)$

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

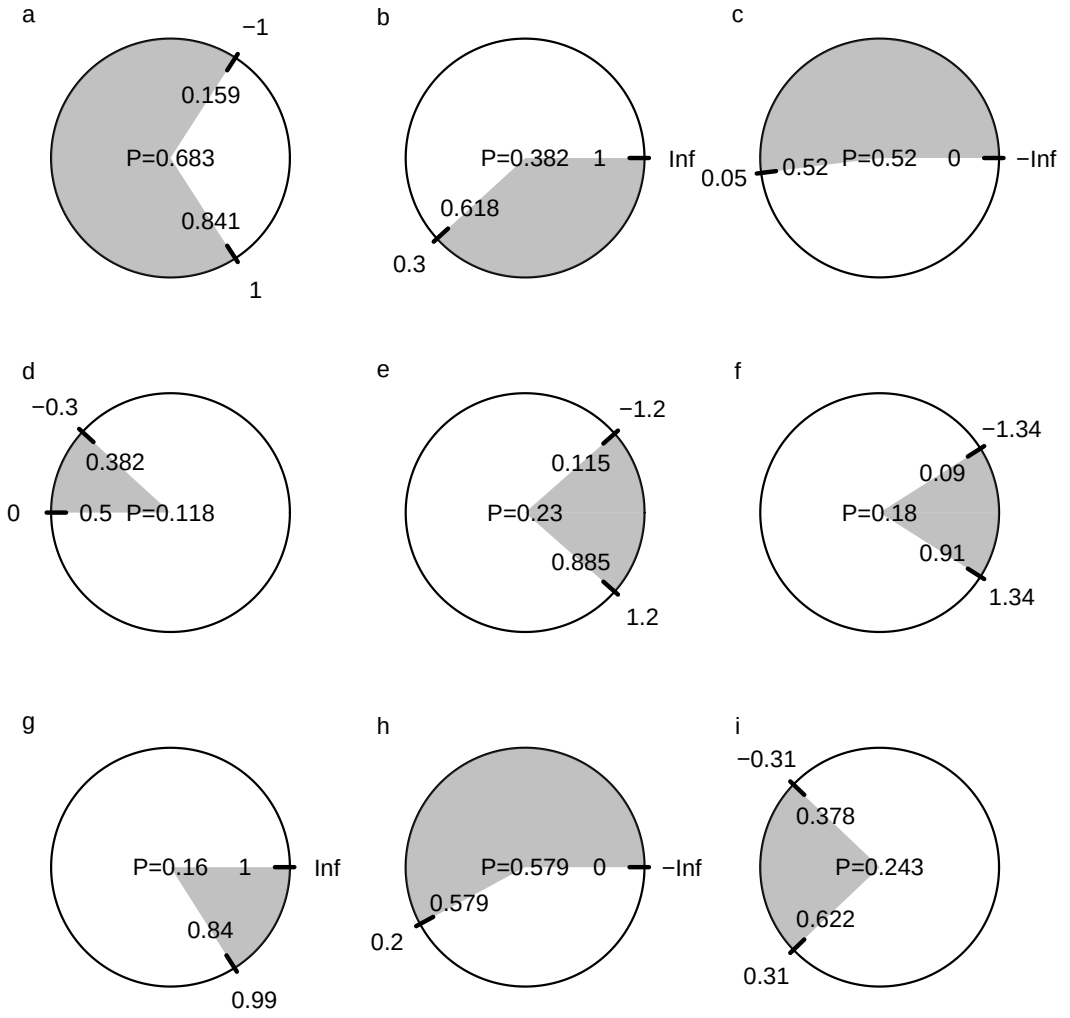
(f) Determine z such that $P(|Z| > z) = 0.18$

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

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

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

Solution: The following circles are meant to help visualize how to get the answers.



(a) $P(|Z| < 1) =$ $\boxed{0.683}$

(b) $P(Z > 0.3) =$ $\boxed{0.382}$

(c) $z =$ $\boxed{0.05}$

(d) $P(-0.3 < Z < 0) =$ $\boxed{0.118}$

(e) $P(|Z| > 1.2) =$ $\boxed{0.23}$

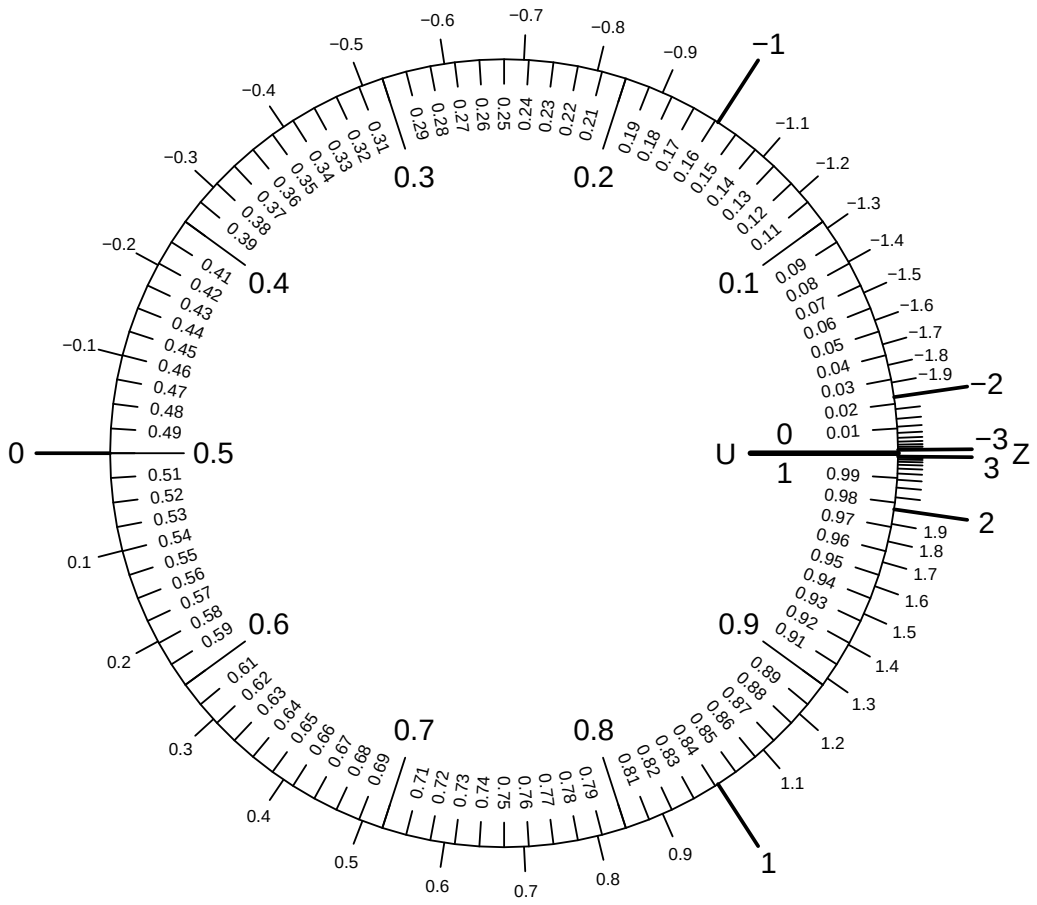
(f) $z =$ $\boxed{1.34}$

(g) $z =$ $\boxed{0.99}$

(h) $P(Z < 0.2) =$ $\boxed{0.579}$

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

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

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

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

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

(e) Evaluate $P(-0.7 < Z < 0.4)$

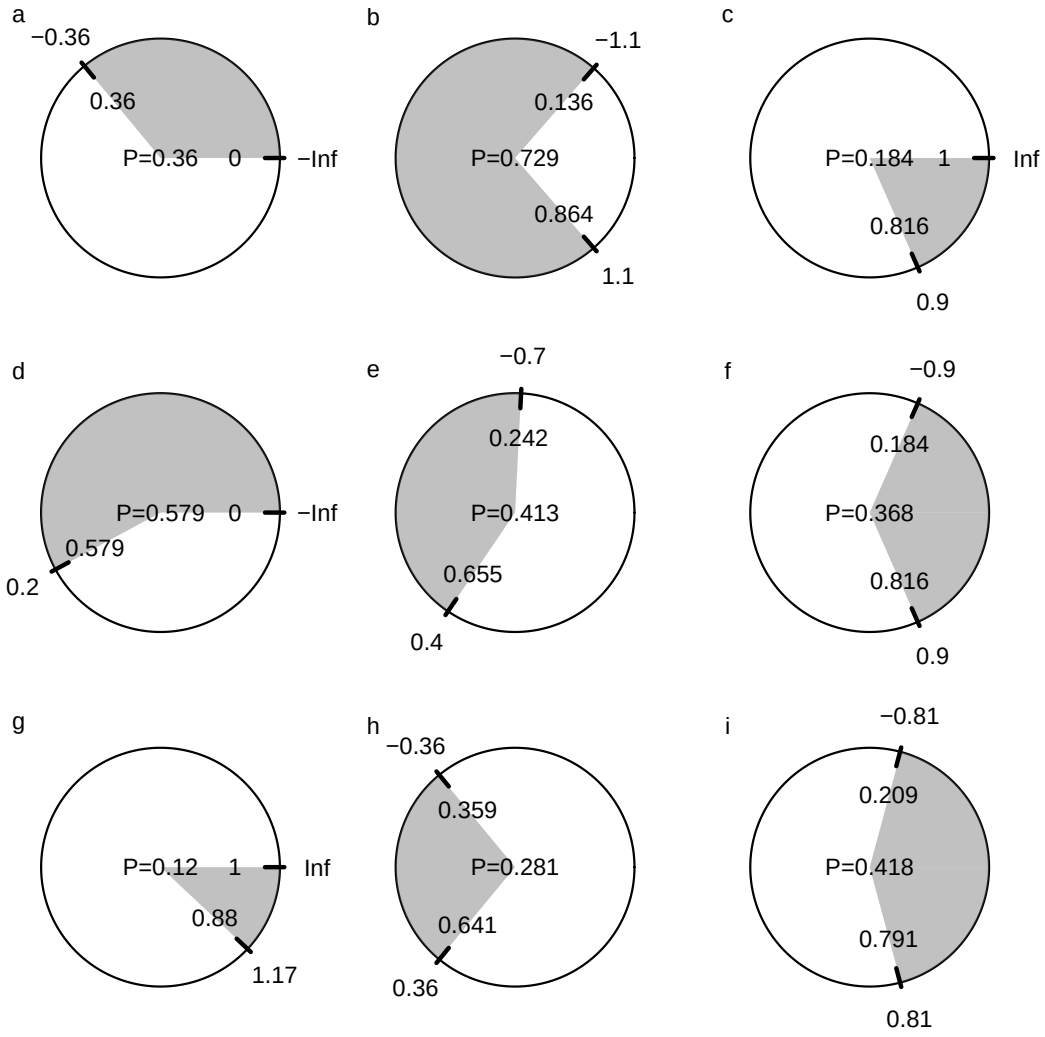
(f) Evaluate $P(|Z| > 0.9)$

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

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

(i) Determine z such that $P(|Z| > z) = 0.42$

Solution: The following circles are meant to help visualize how to get the answers.



(a) $z =$ -0.36

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

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

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

(e) $P(-0.7 < Z < 0.4) =$ 0.413

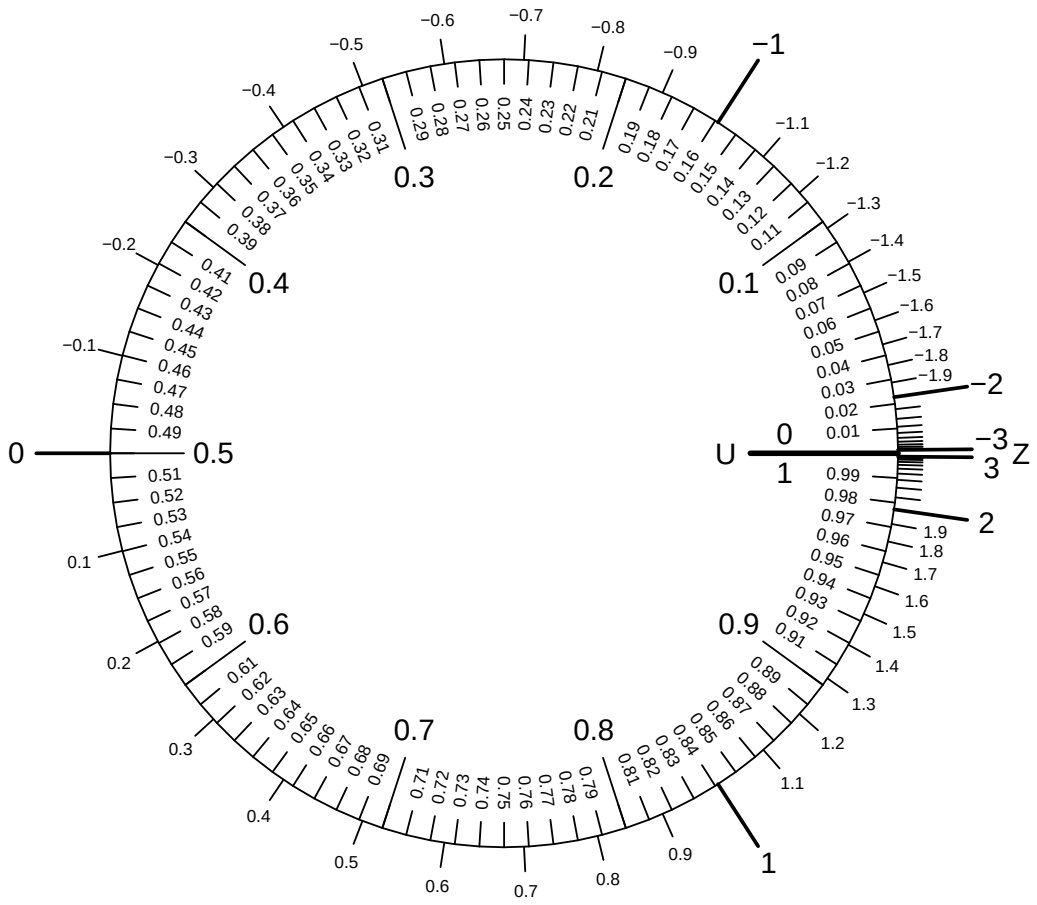
(f) $P(|Z| > 0.9) =$ 0.368

(g) $z =$ 1.17

(h) $z =$ 0.36

(i) $z =$ 0.81

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 $P(|Z| < z) = 0.42$

(b) Evaluate $P(-0.6 < Z < 1.1)$

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

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

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

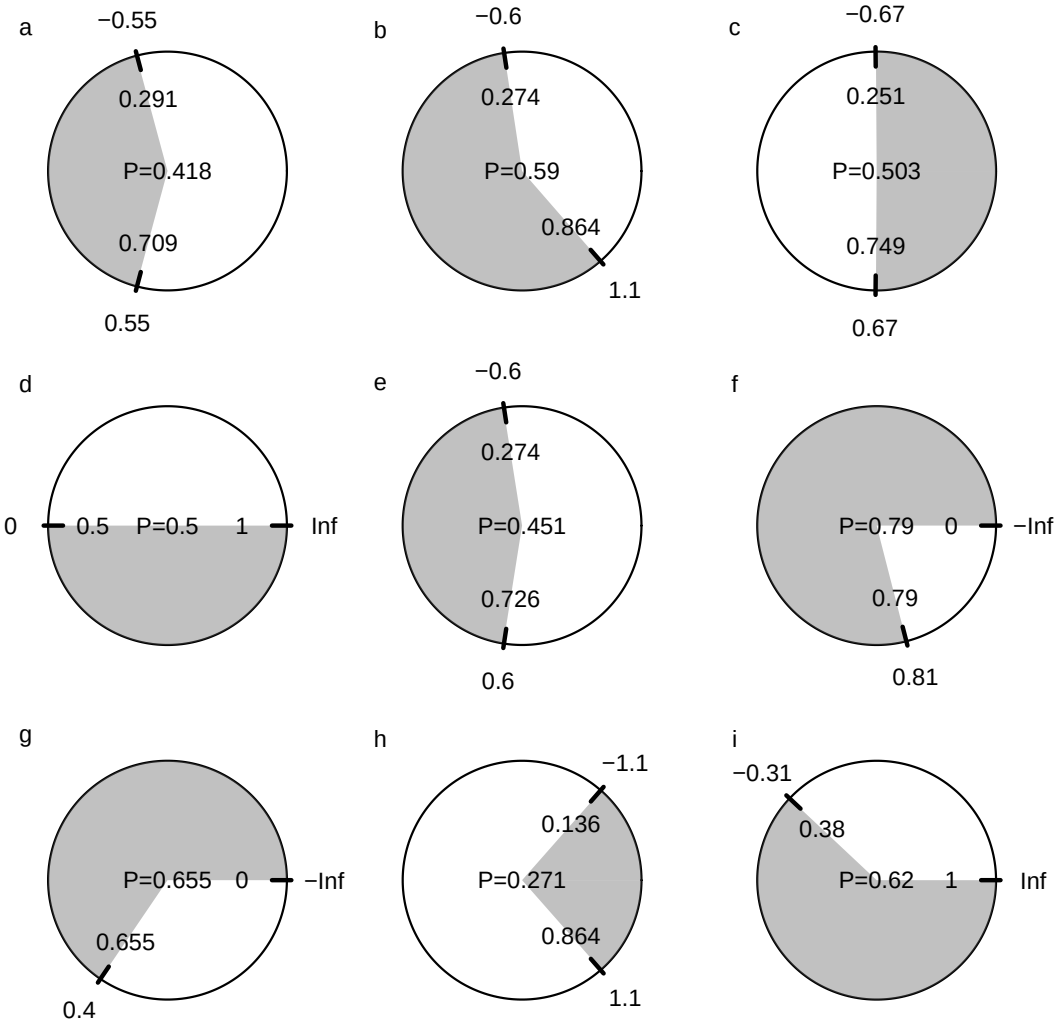
(f) Determine z such that $P(Z < z) = 0.79$

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

(h) Evaluate $P(|Z| > 1.1)$

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

Solution: The following circles are meant to help visualize how to get the answers.



(a) $z =$ 0.55

(b) $P(-0.6 < Z < 1.1) =$ 0.59

(c) $z =$ 0.67

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

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

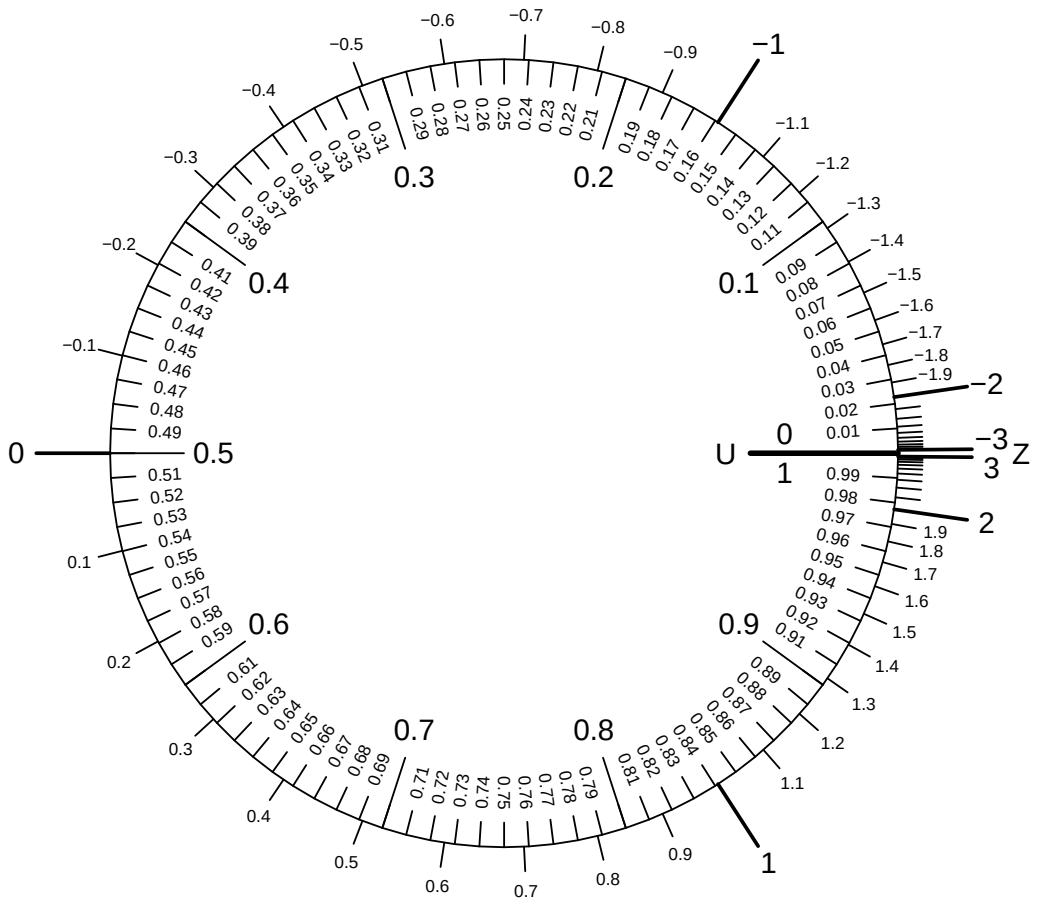
(f) $z =$ 0.81

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

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

(i) $z =$ -0.31

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 $P(|Z| > z) = 0.68$

(b) Evaluate $P(Z > 0.2)$

(c) Evaluate $P(|Z| < 1.3)$

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

(e) Evaluate $P(-0.4 < Z < 0.1)$

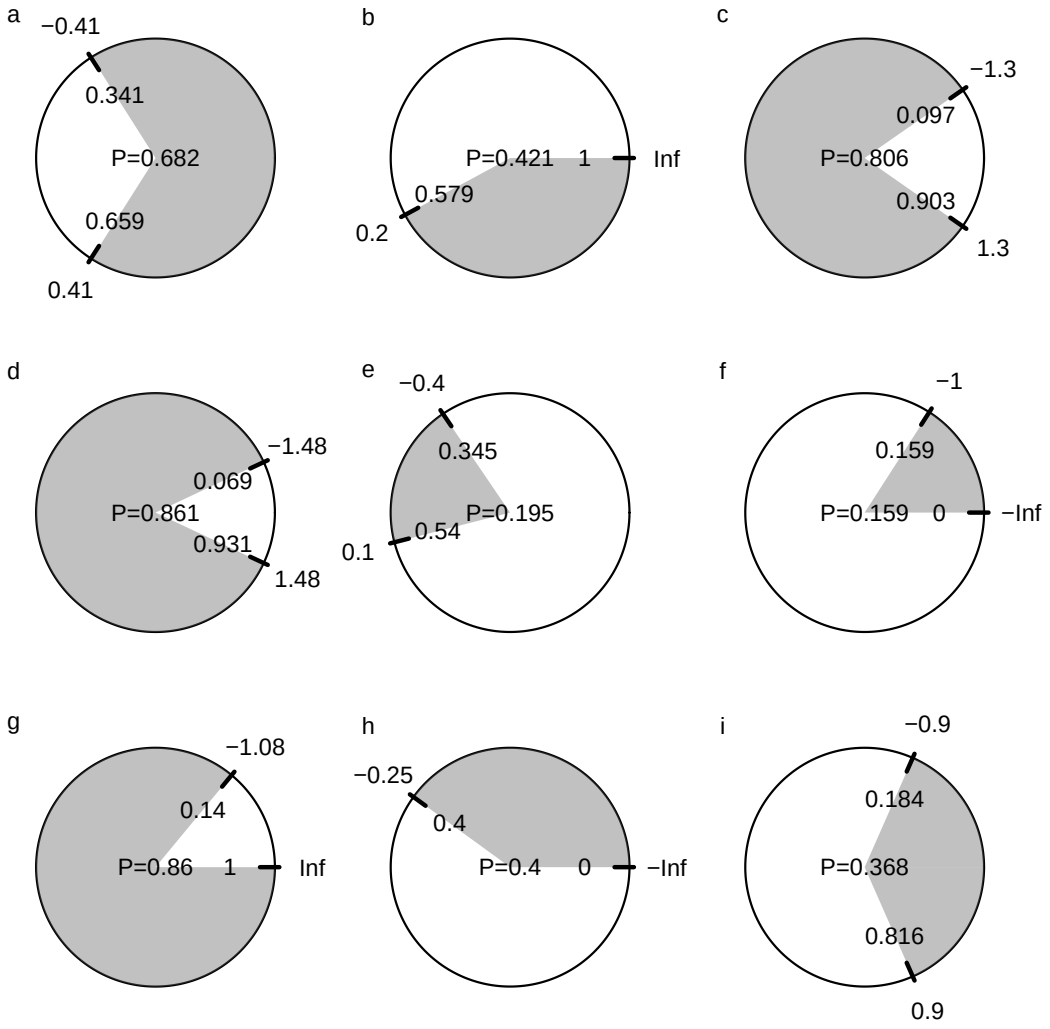
(f) Evaluate $P(Z < -1)$

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

(h) Determine z such that $P(Z < z) = 0.4$

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

Solution: The following circles are meant to help visualize how to get the answers.



(a) $z =$ 0.41

(b) $P(Z > 0.2) =$ 0.421

(c) $P(|Z| < 1.3) =$ 0.806

(d) $z =$ 1.48

(e) $P(-0.4 < Z < 0.1) =$ 0.195

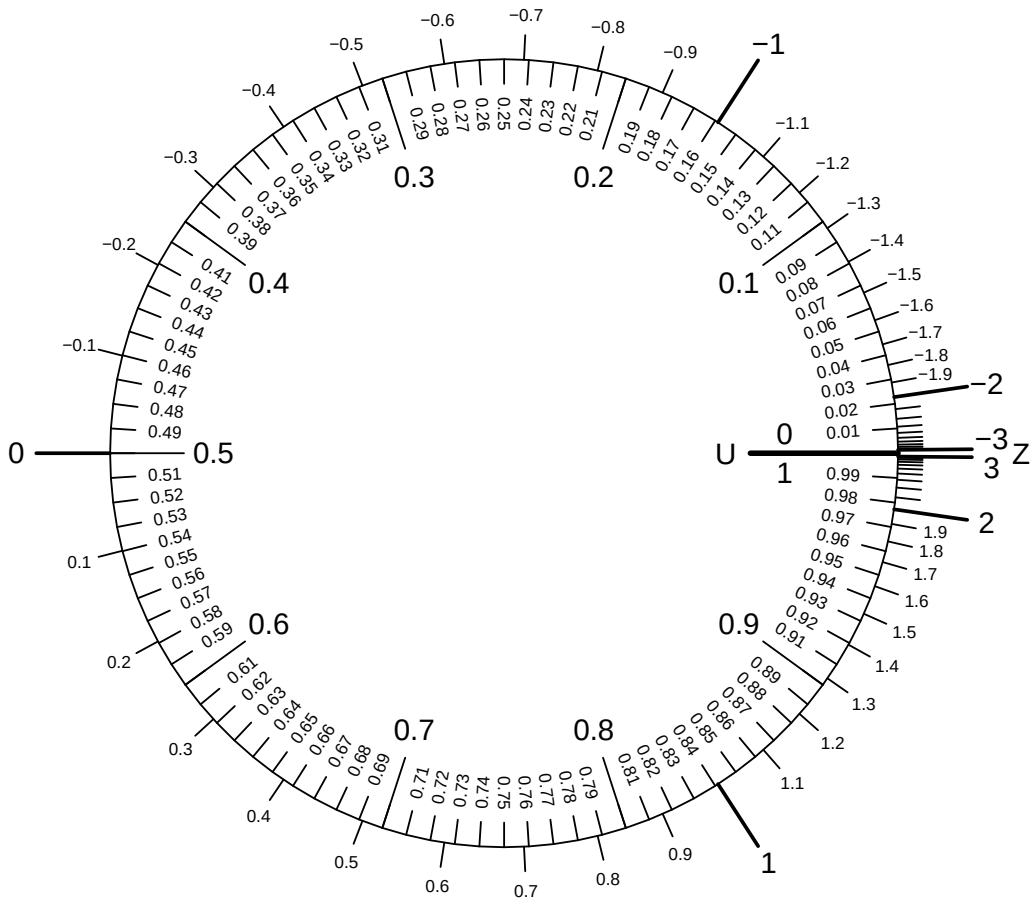
(f) $P(Z < -1) =$ 0.159

(g) $z =$ -1.08

(h) $z =$ -0.25

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

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 $P(Z < z) = 0.38$

(b) Evaluate $P(-0.6 < Z < -0.1)$

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

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

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

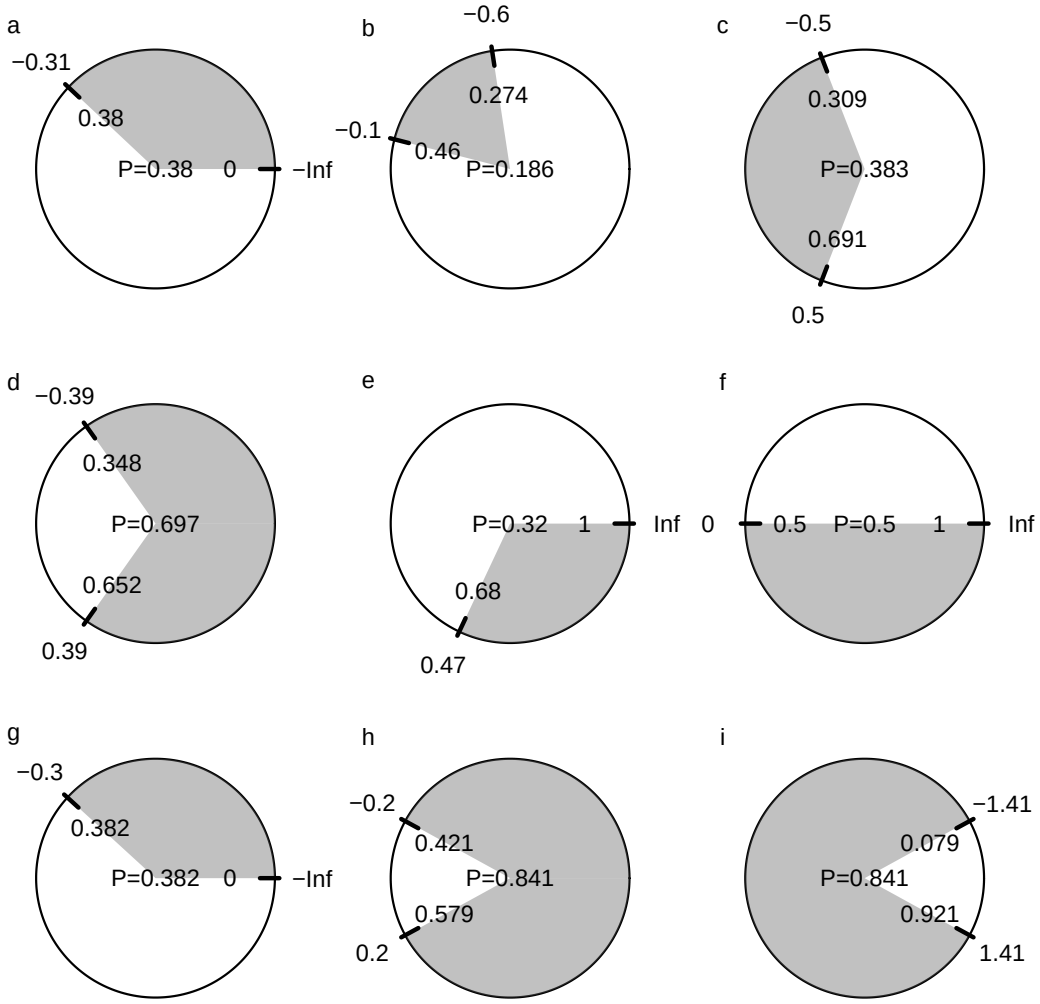
(f) Evaluate $P(Z > 0)$

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

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

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

Solution: The following circles are meant to help visualize how to get the answers.



(a) $z =$ -0.31

(b) $P(-0.6 < Z < -0.1) =$ 0.186

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

(d) $z =$ 0.39

(e) $z =$ 0.47

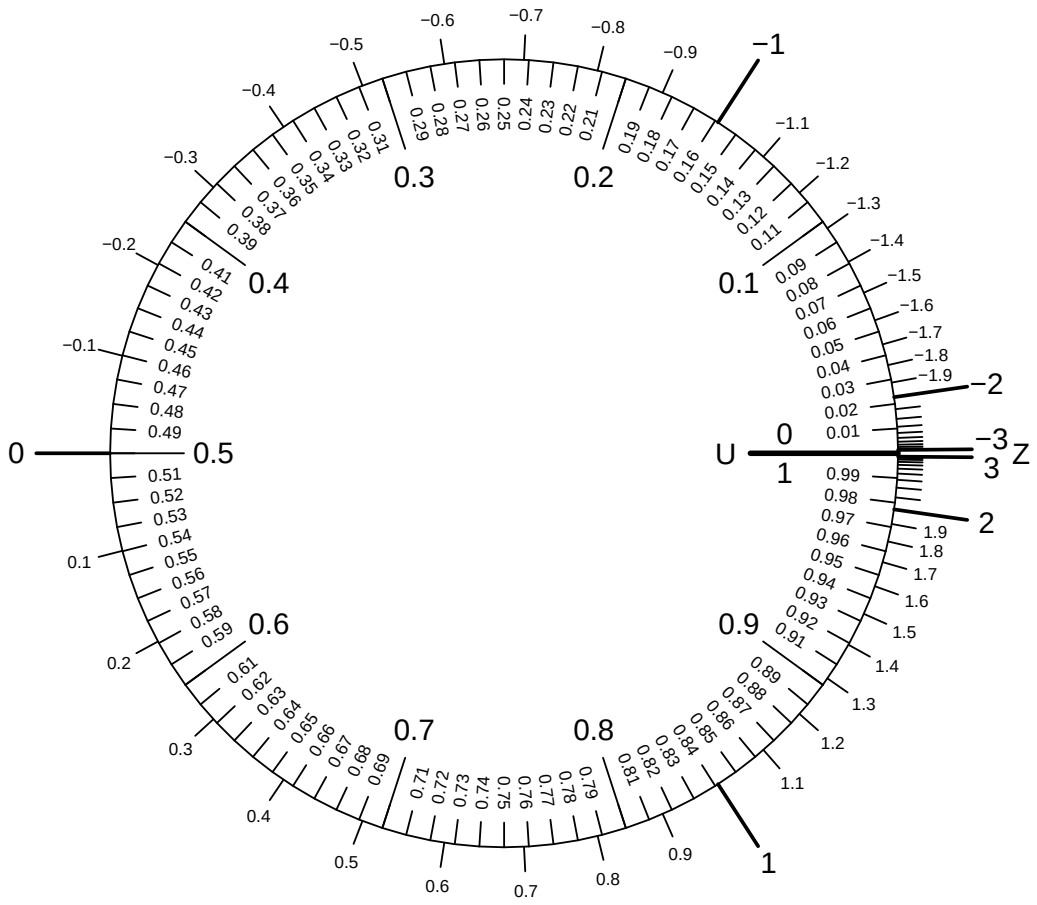
(f) $P(Z > 0) =$ 0.5

(g) $P(Z < -0.3) =$ 0.382

(h) $P(|Z| > 0.2) =$ 0.841

(i) $z =$ 1.41

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) Determine z such that $P(|Z| < z) = 0.64$

(b) Determine z such that $P(Z < z) = 0.15$

(c) Evaluate $P(|Z| > 0.2)$

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

(e) Determine z such that $P(|Z| > z) = 0.34$

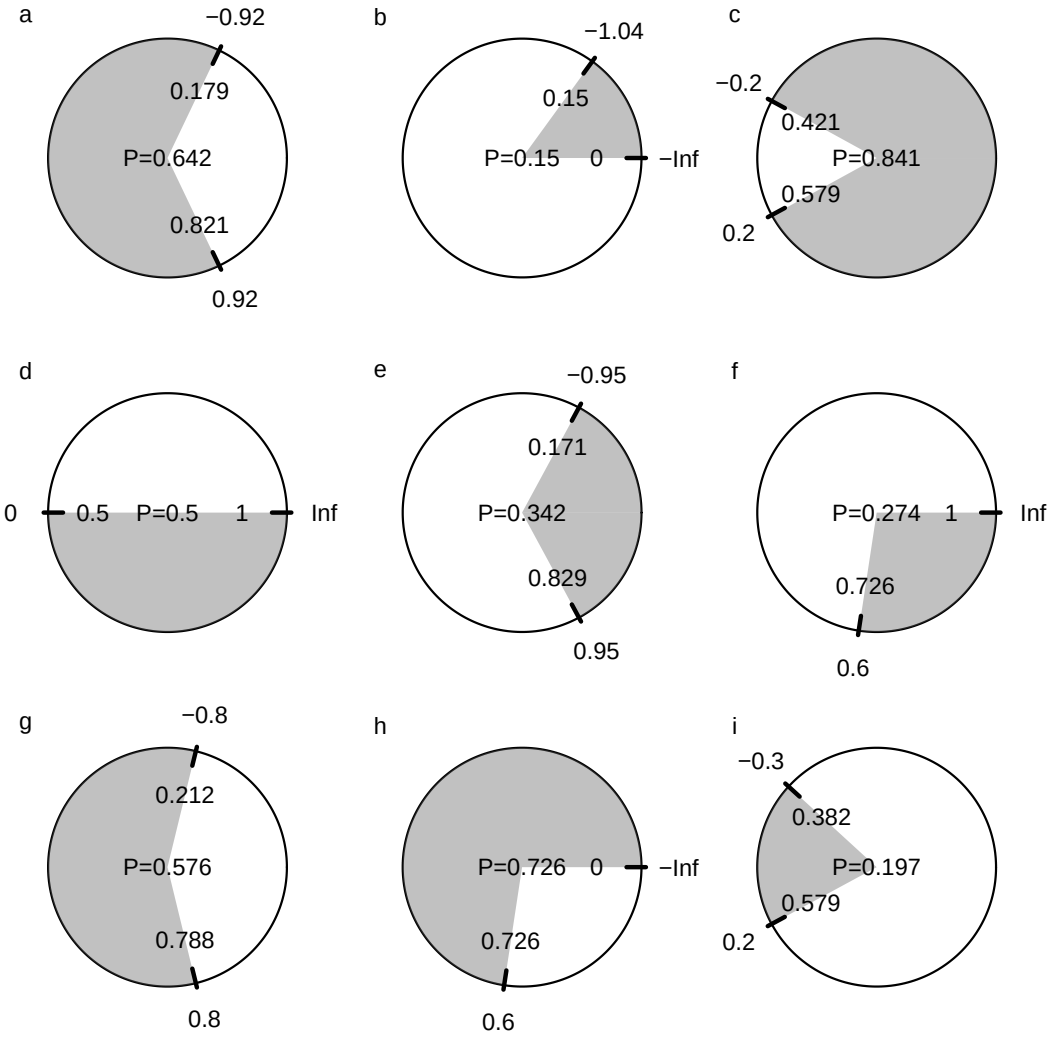
(f) Evaluate $P(Z > 0.6)$

(g) Evaluate $P(|Z| < 0.8)$

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

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

Solution: The following circles are meant to help visualize how to get the answers.



(a) $z =$ 0.92

(b) $z =$ -1.04

(c) $P(|Z| > 0.2) =$ 0.841

(d) $z =$ 0

(e) $z =$ 0.95

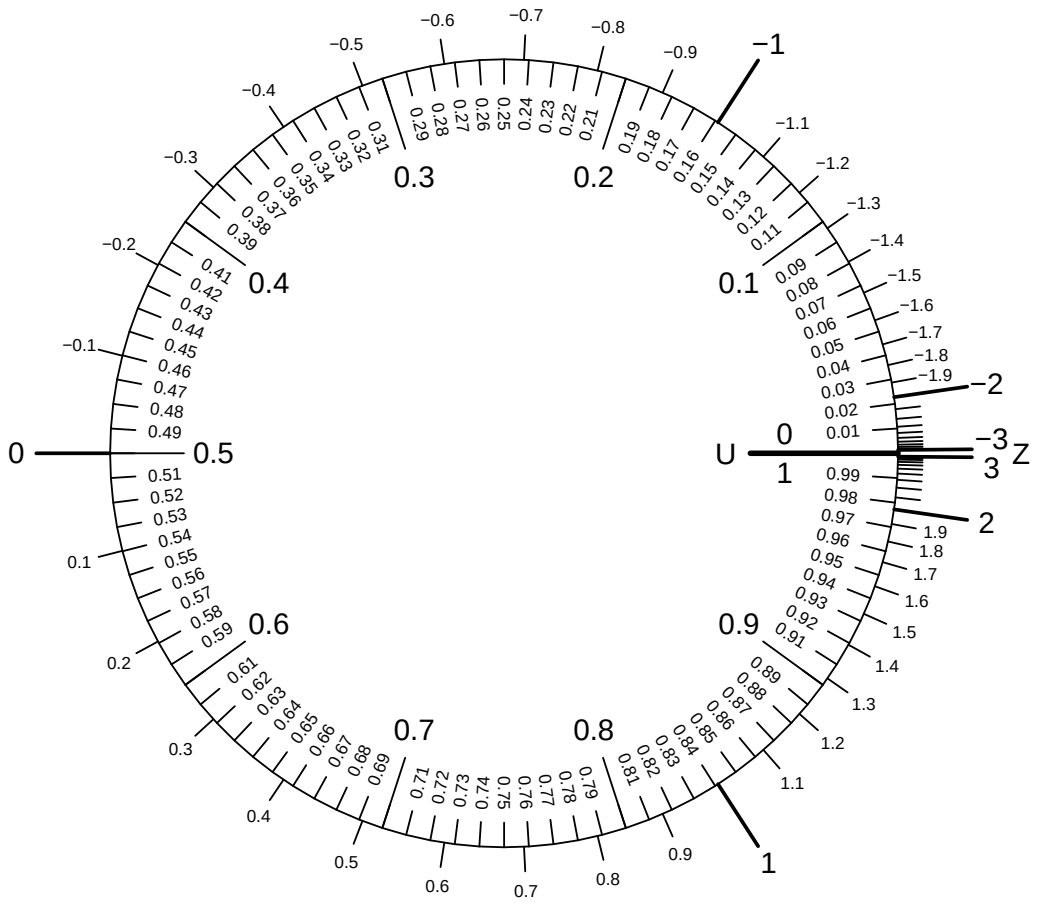
(f) $P(Z > 0.6) =$ 0.274

(g) $P(|Z| < 0.8) =$ 0.576

(h) $P(Z < 0.6) =$ 0.726

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

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) Determine z such that $P(Z > z) = 0.37$

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

(c) Determine z such that $P(Z < z) = 0.65$

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

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

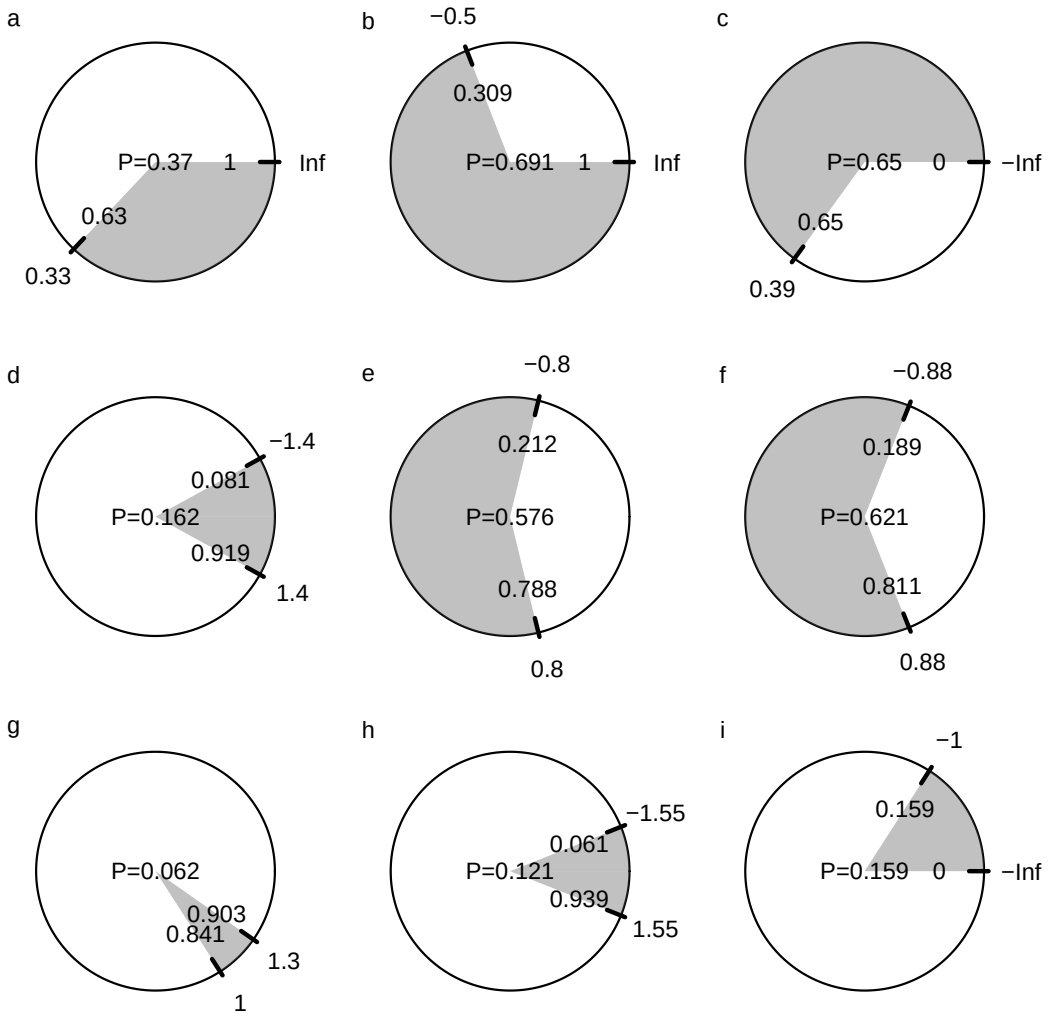
(f) Determine z such that $P(|Z| < z) = 0.62$

(g) Evaluate $P(1 < Z < 1.3)$

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

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

Solution: The following circles are meant to help visualize how to get the answers.



(a) $z =$ 0.33

(b) $P(Z > -0.5) =$ 0.691

(c) $z =$ 0.39

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

(e) $P(|Z| < 0.8) =$ 0.576

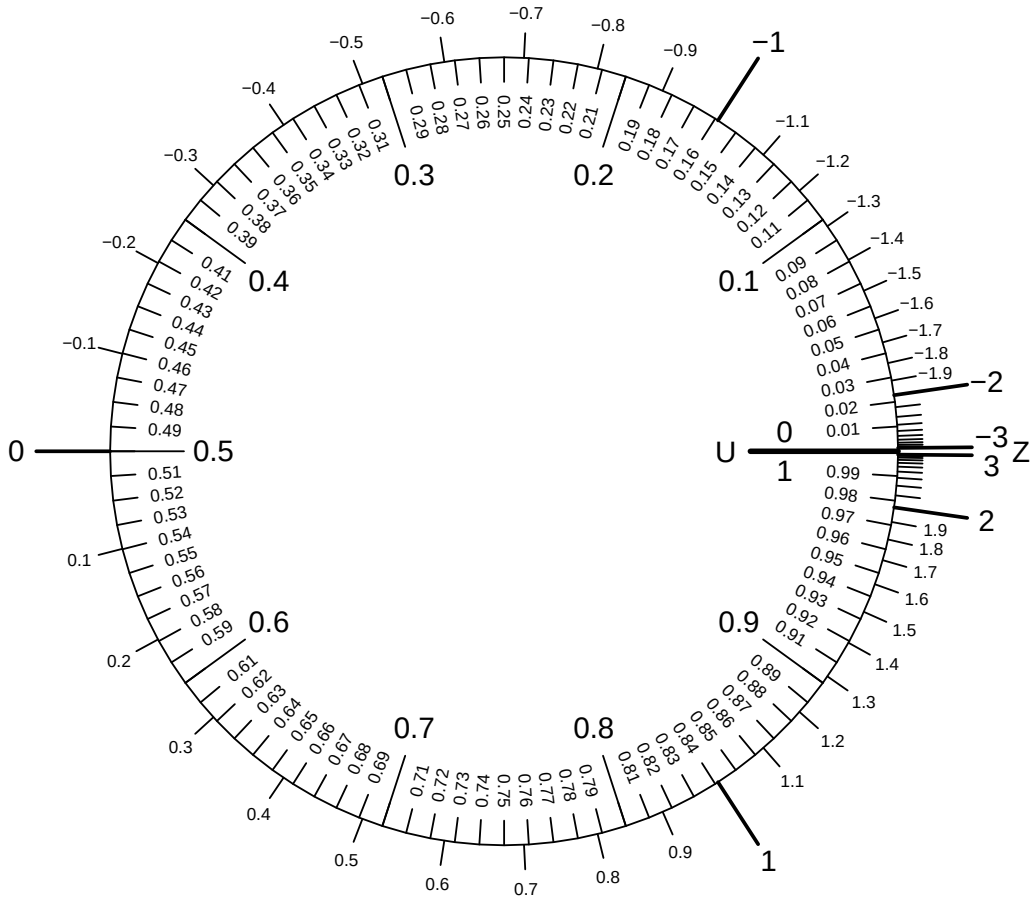
(f) $z =$ 0.88

(g) $P(1 < Z < 1.3) =$ 0.062

(h) $z =$ 1.55

(i) $P(Z < -1) =$ 0.159

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 $P(|Z| > 0.2)$

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

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

(d) Determine z such that $P(Z > z) = 0.43$

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

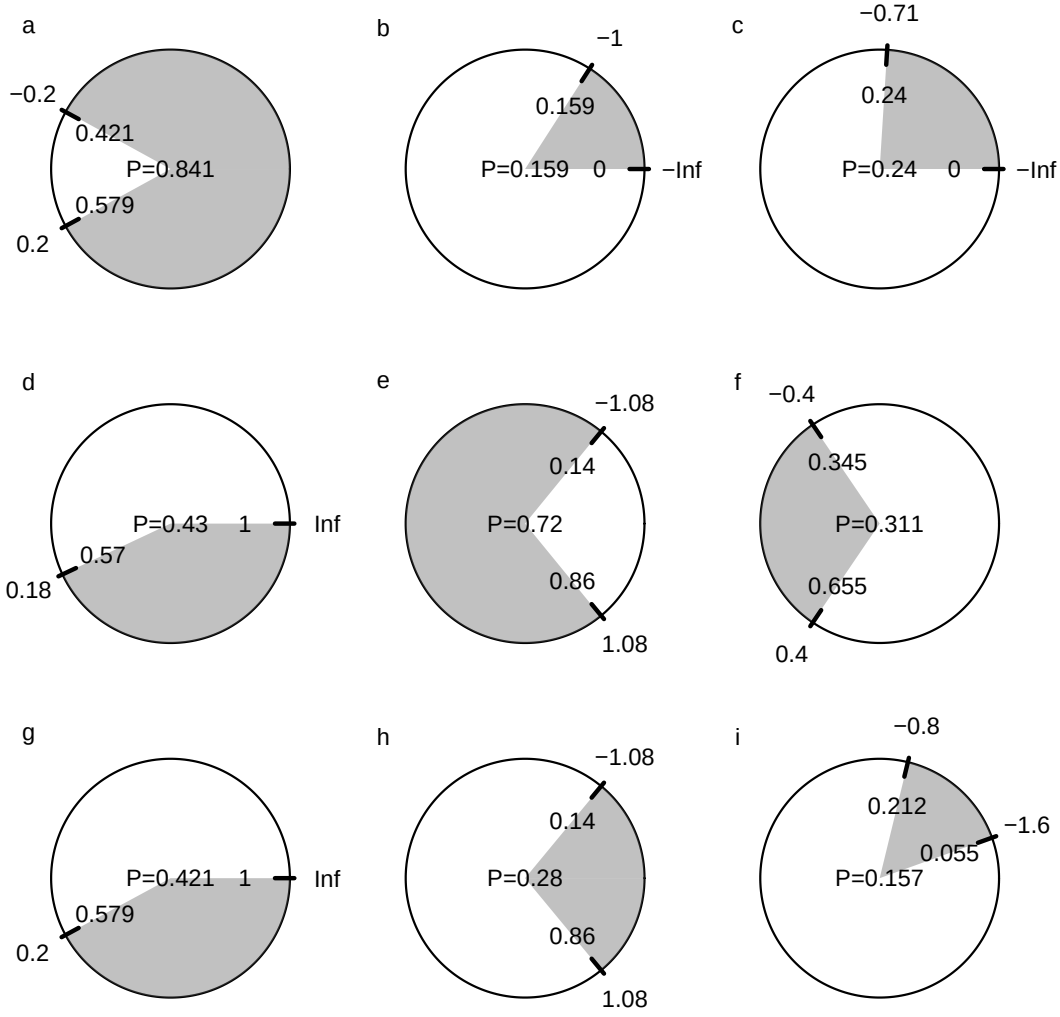
(f) Evaluate $P(|Z| < 0.4)$

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

(h) Determine z such that $P(|Z| > z) = 0.28$

(i) Evaluate $P(-1.6 < Z < -0.8)$

Solution: The following circles are meant to help visualize how to get the answers.



(a) $P(|Z| > 0.2) =$ $\boxed{0.841}$

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

(c) $z =$ $\boxed{\text{-0.71}}$

(d) $z =$ $\boxed{0.18}$

(e) $z =$ $\boxed{1.08}$

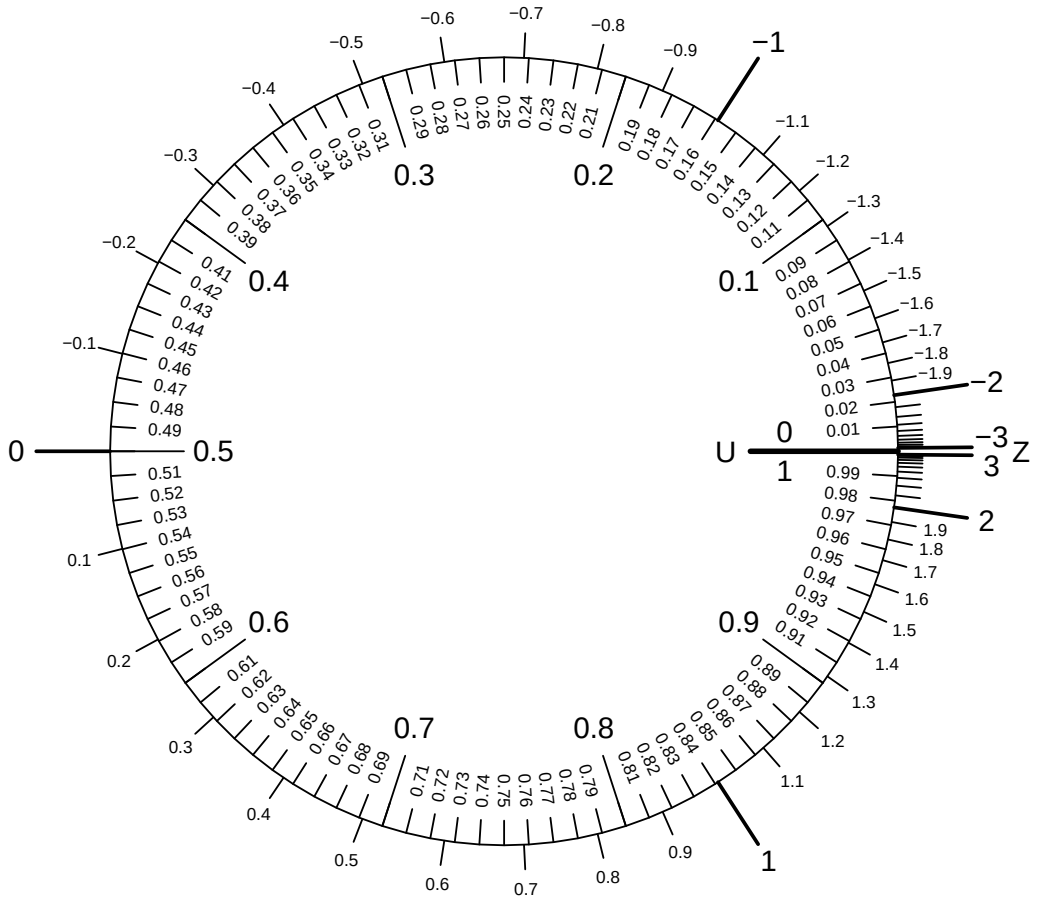
(f) $P(|Z| < 0.4) =$ $\boxed{0.311}$

(g) $P(Z > 0.2) =$ $\boxed{0.421}$

(h) $z =$ $\boxed{1.08}$

(i) $P(-1.6 < Z < -0.8) =$ $\boxed{0.157}$

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

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

(c) Determine z such that $P(|Z| > z) = 0.24$

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

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

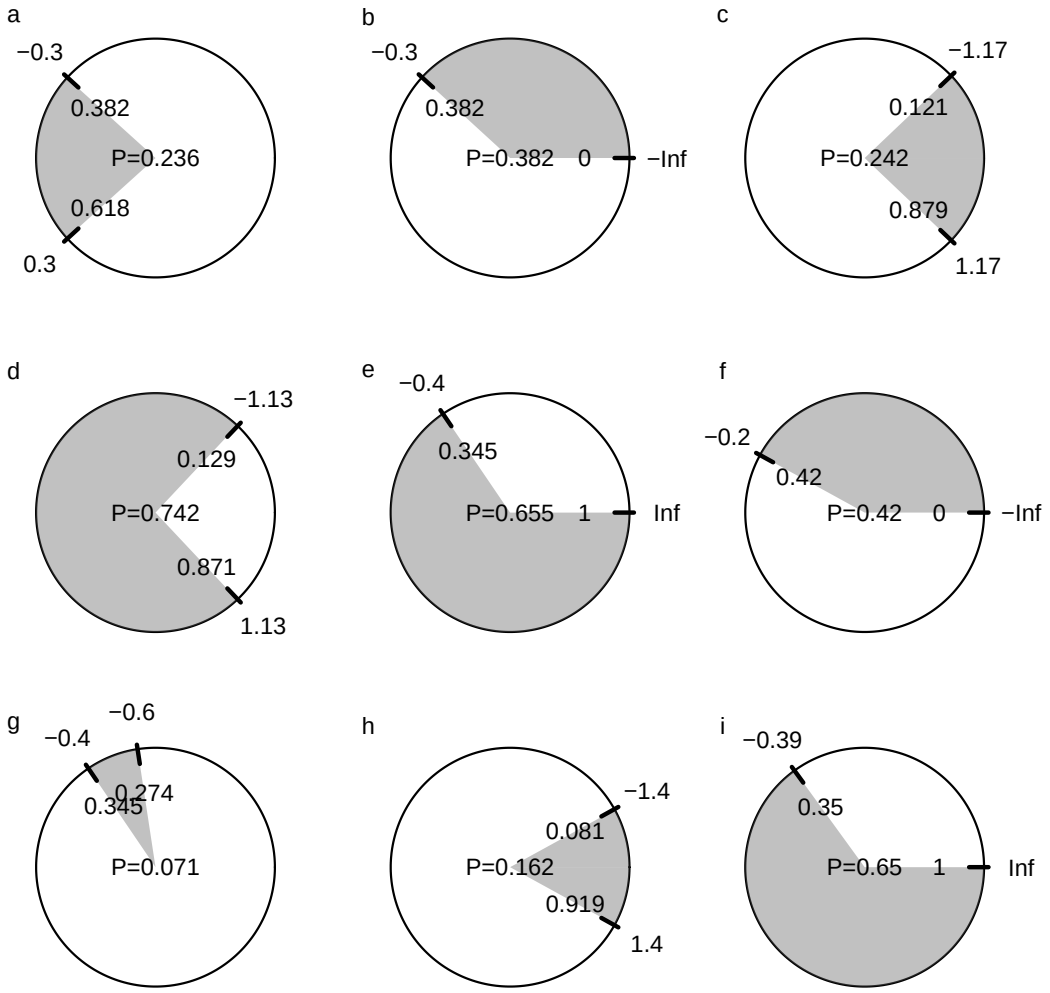
(f) Determine z such that $P(Z < z) = 0.42$

(g) Evaluate $P(-0.6 < Z < -0.4)$

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

(i) Determine z such that $P(Z > z) = 0.65$

Solution: The following circles are meant to help visualize how to get the answers.



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

(b) $P(Z < -0.3) =$ 0.382

(c) $z =$ 1.17

(d) $z =$ 1.13

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

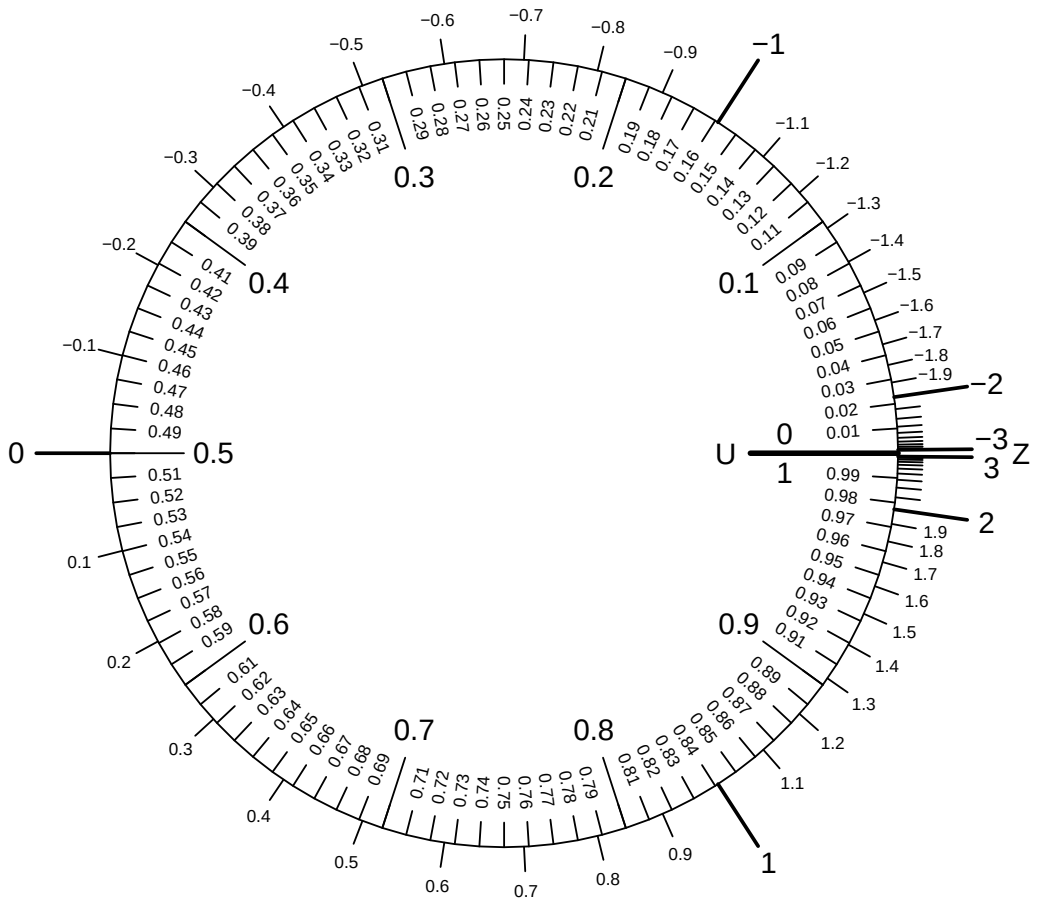
(f) $z =$ -0.2

(g) $P(-0.6 < Z < -0.4) =$ 0.071

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

(i) $z =$ -0.39

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 $P(|Z| < 0.4)$

(b) Determine z such that $P(|Z| > z) = 0.78$

(c) Evaluate $P(Z > 0.8)$

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

(e) Determine z such that $P(Z > z) = 0.92$

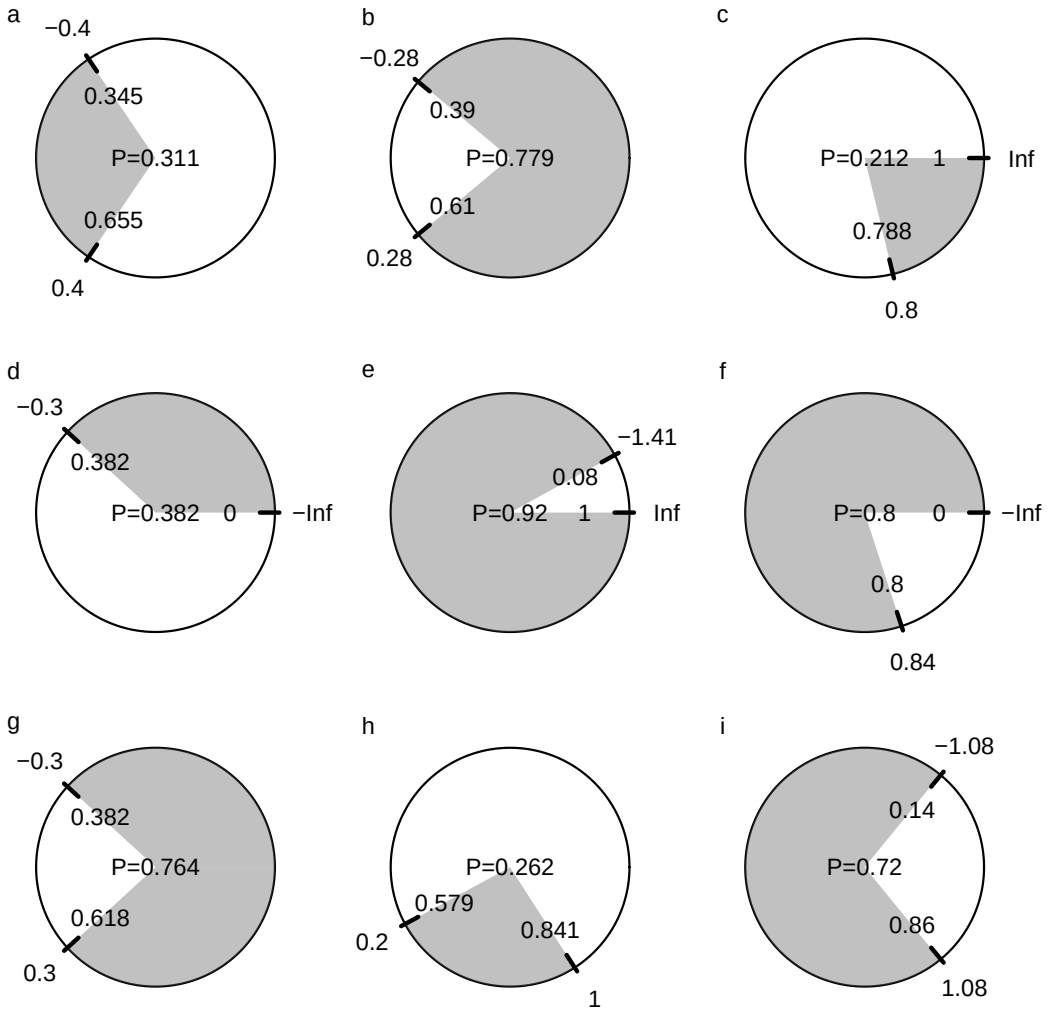
(f) Determine z such that $P(Z < z) = 0.8$

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

(h) Evaluate $P(0.2 < Z < 1)$

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

Solution: The following circles are meant to help visualize how to get the answers.



(a) $P(|Z| < 0.4) =$ $\boxed{0.311}$

(b) $z =$ $\boxed{0.28}$

(c) $P(Z > 0.8) =$ $\boxed{0.212}$

(d) $P(Z < -0.3) =$ $\boxed{0.382}$

(e) $z =$ $\boxed{\text{-1.41}}$

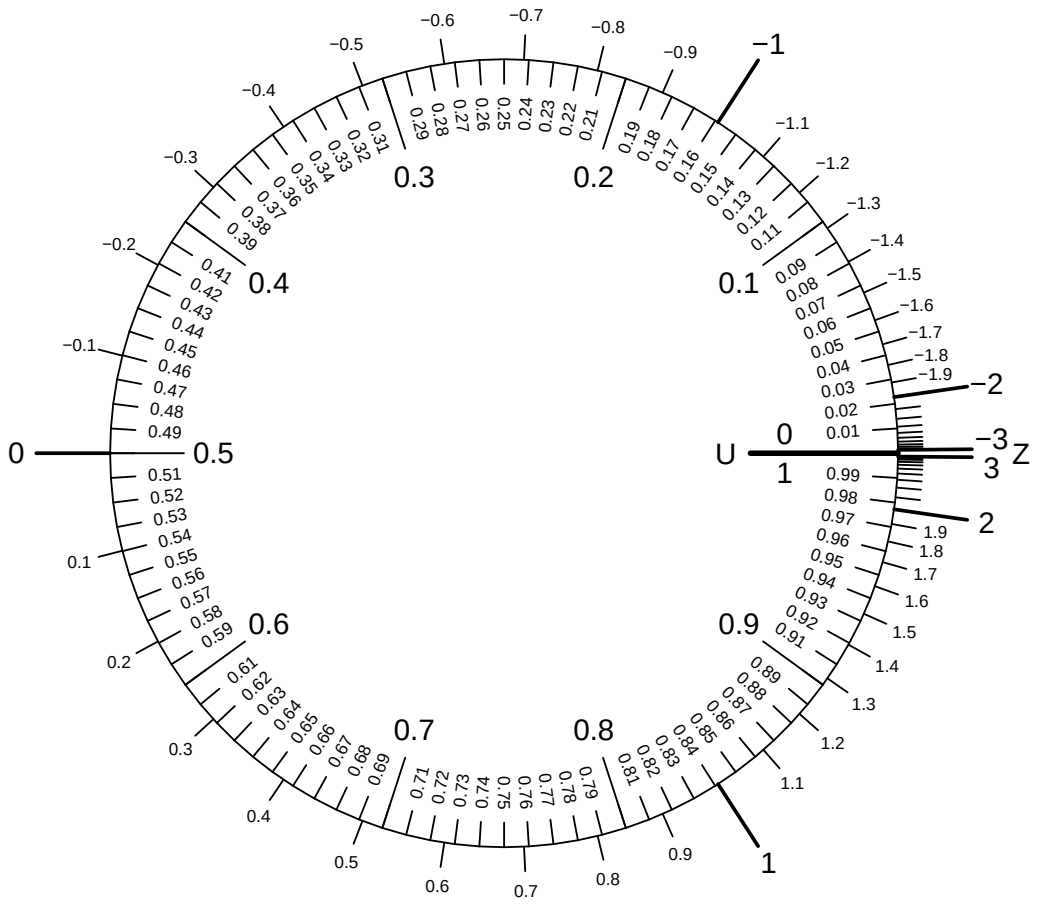
(f) $z =$ $\boxed{0.84}$

(g) $P(|Z| > 0.3) =$ $\boxed{0.764}$

(h) $P(0.2 < Z < 1) =$ $\boxed{0.262}$

(i) $z =$ $\boxed{1.08}$

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 $P(Z < 1.7)$

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

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

(d) Determine z such that $P(|Z| > z) = 0.64$

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

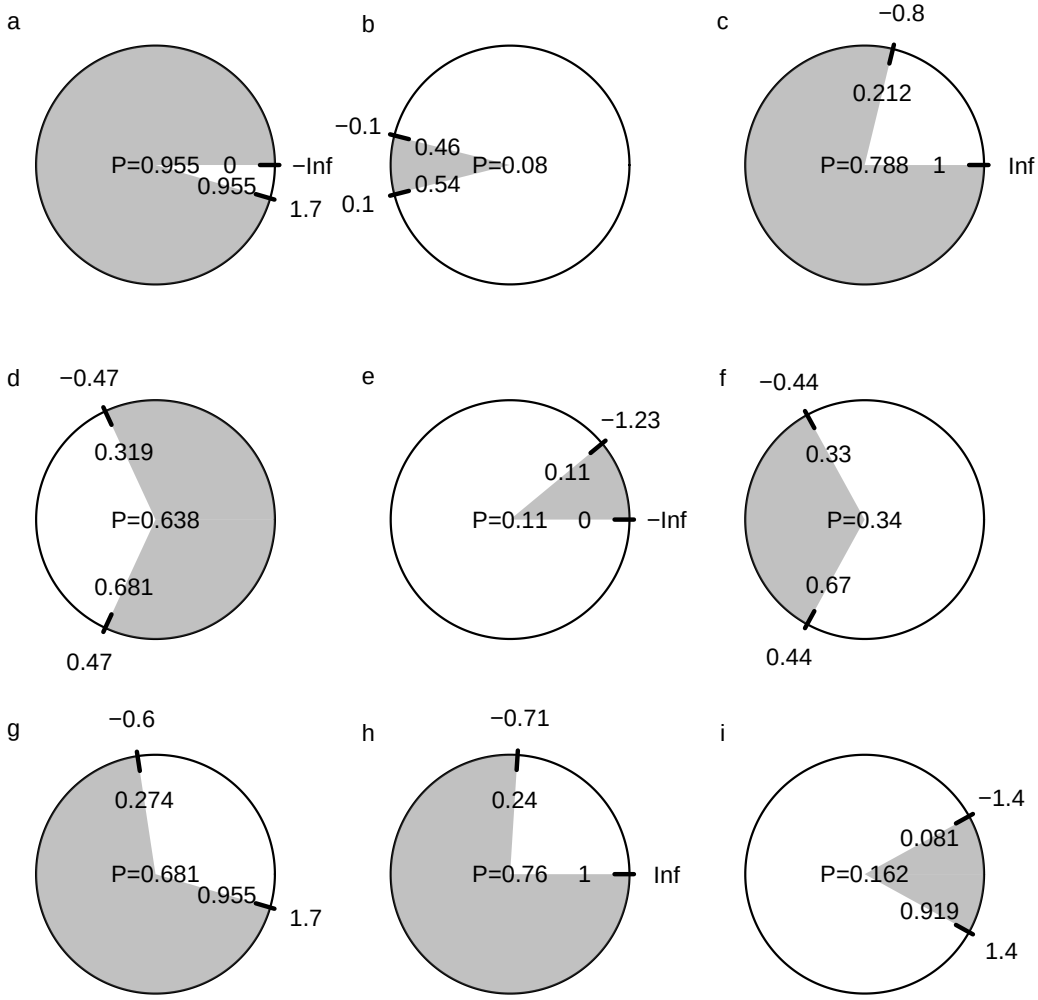
(f) Determine z such that $P(|Z| < z) = 0.34$

(g) Evaluate $P(-0.6 < Z < 1.7)$

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

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

Solution: The following circles are meant to help visualize how to get the answers.



(a) $P(Z < 1.7) =$ 0.955

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

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

(d) $z =$ 0.47

(e) $z =$ -1.23

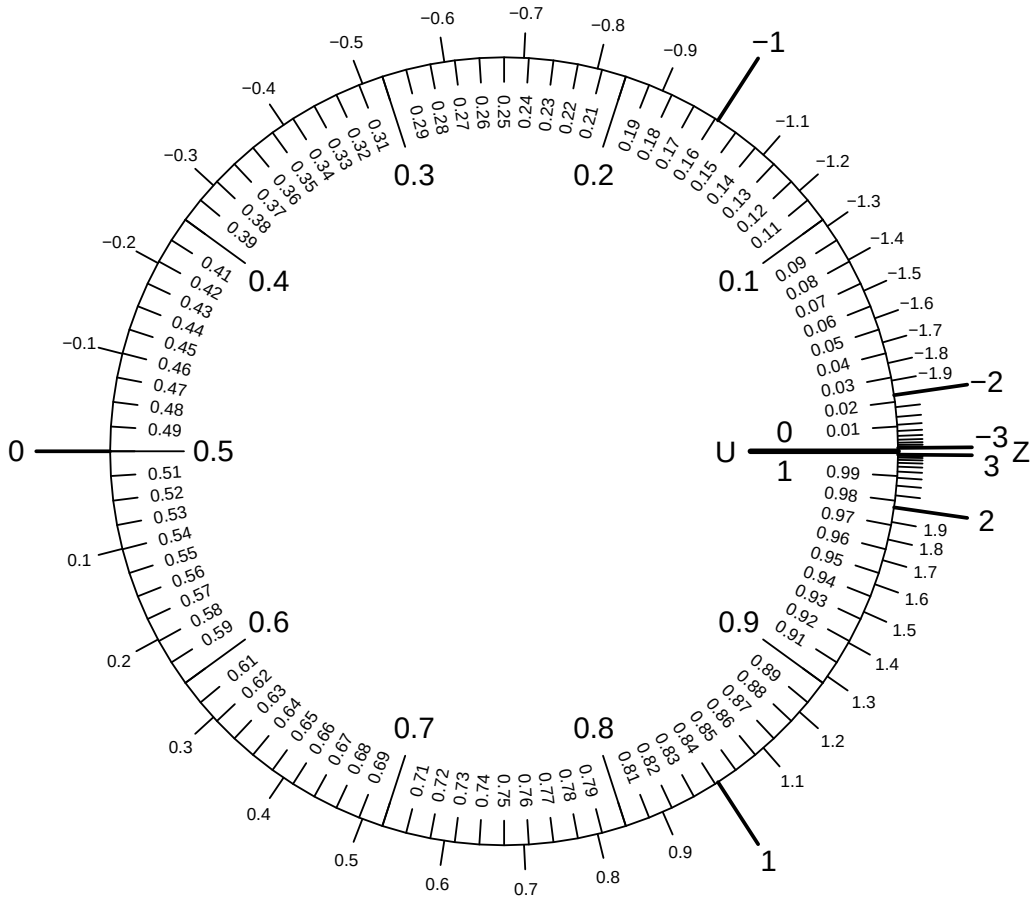
(f) $z =$ 0.44

(g) $P(-0.6 < Z < 1.7) =$ 0.681

(h) $z =$ -0.71

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

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 $P(|Z| < 0.4)$

(b) Determine z such that $P(|Z| > z) = 0.4$

(c) Evaluate $P(0 < Z < 1.4)$

(d) Determine z such that $P(Z < z) = 0.4$

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

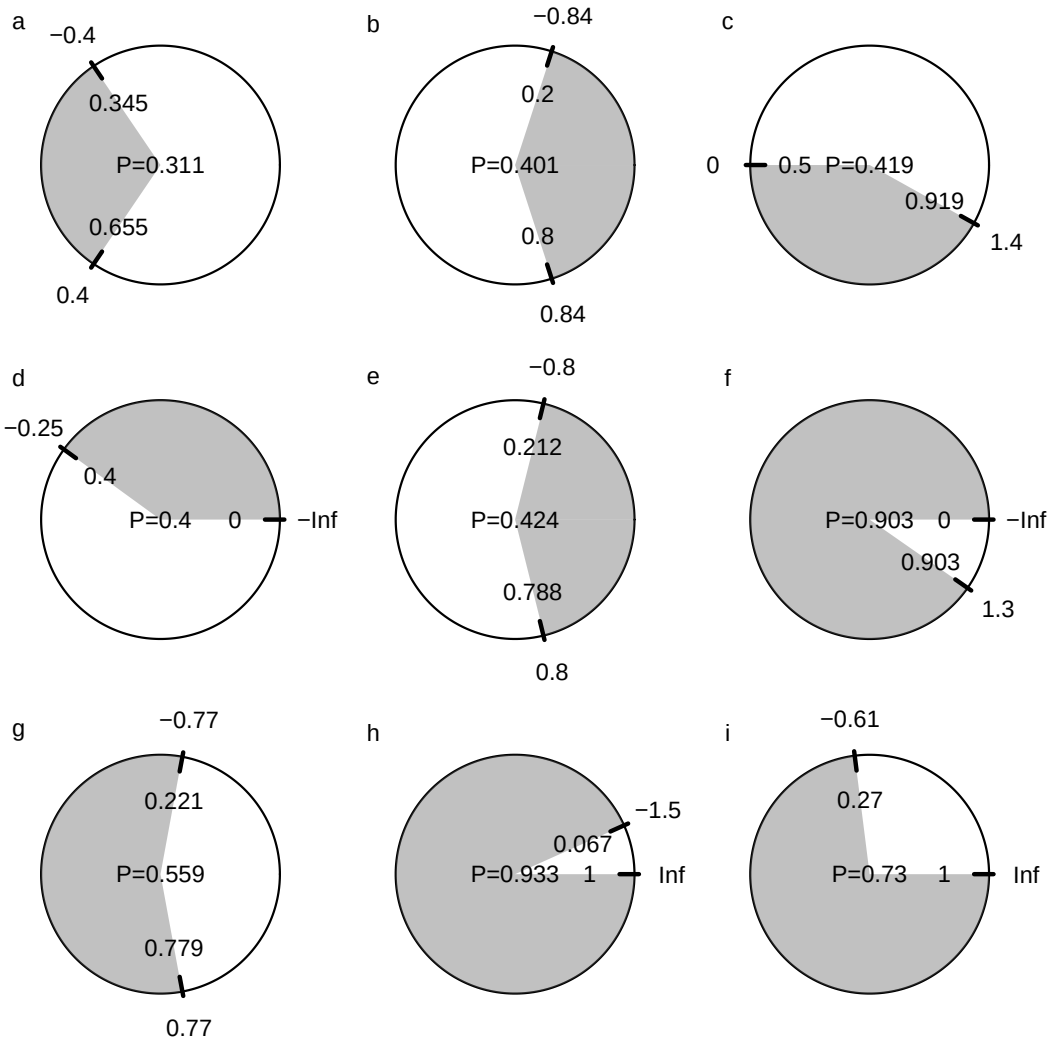
(f) Evaluate $P(Z < 1.3)$

(g) Determine z such that $P(|Z| < z) = 0.56$

(h) Evaluate $P(Z > -1.5)$

(i) Determine z such that $P(Z > z) = 0.73$

Solution: The following circles are meant to help visualize how to get the answers.



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

(b) $z =$ 0.84

(c) $P(0 < Z < 1.4) =$ 0.419

(d) $z =$ -0.25

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

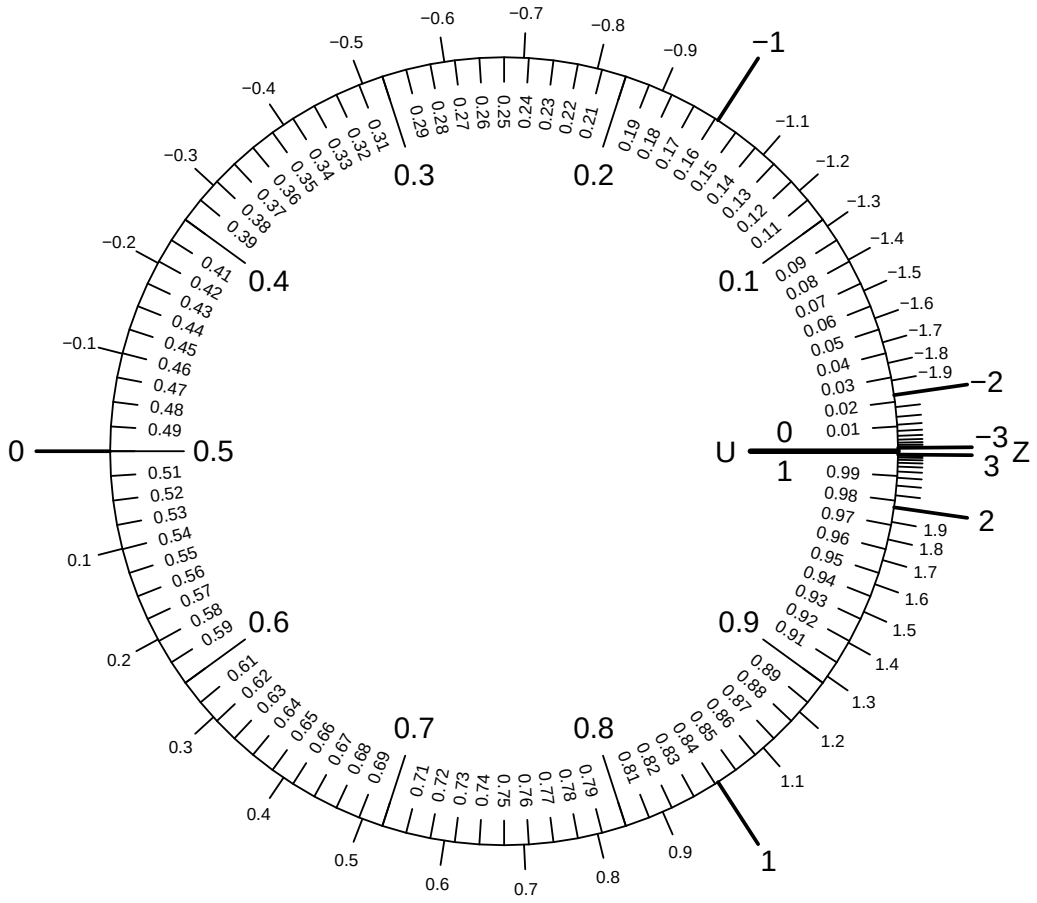
(f) $P(Z < 1.3) =$ 0.903

(g) $z =$ 0.77

(h) $P(Z > -1.5) =$ 0.933

(i) $z =$ -0.61

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 $P(Z > -0.2)$

(b) Determine z such that $P(Z < z) = 0.64$

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

(d) Determine z such that $P(Z > z) = 0.88$

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

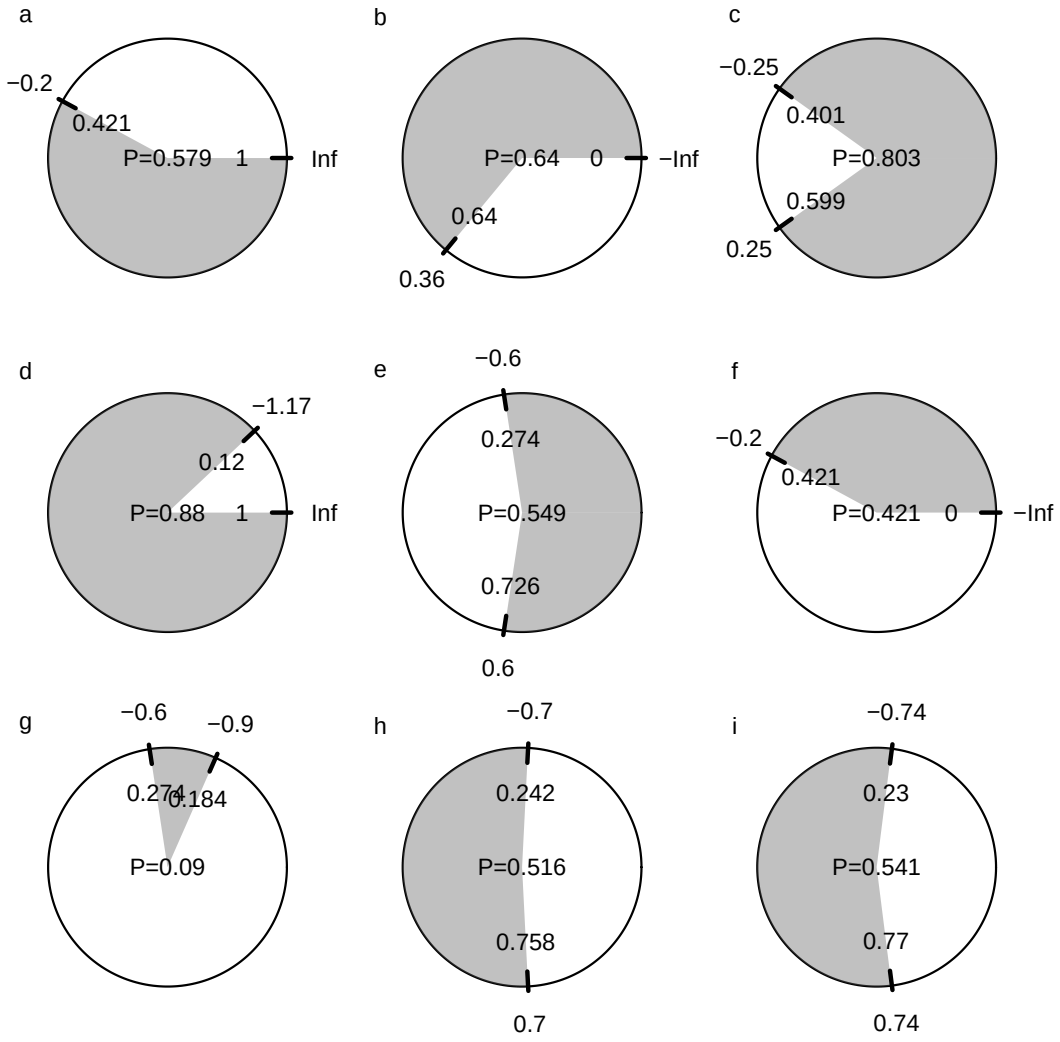
(f) Evaluate $P(Z < -0.2)$

(g) Evaluate $P(-0.9 < Z < -0.6)$

(h) Evaluate $P(|Z| < 0.7)$

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

Solution: The following circles are meant to help visualize how to get the answers.



(a) $P(Z > -0.2)$ = 0.579

(b) z = 0.36

(c) z = 0.25

(d) z = -1.17

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

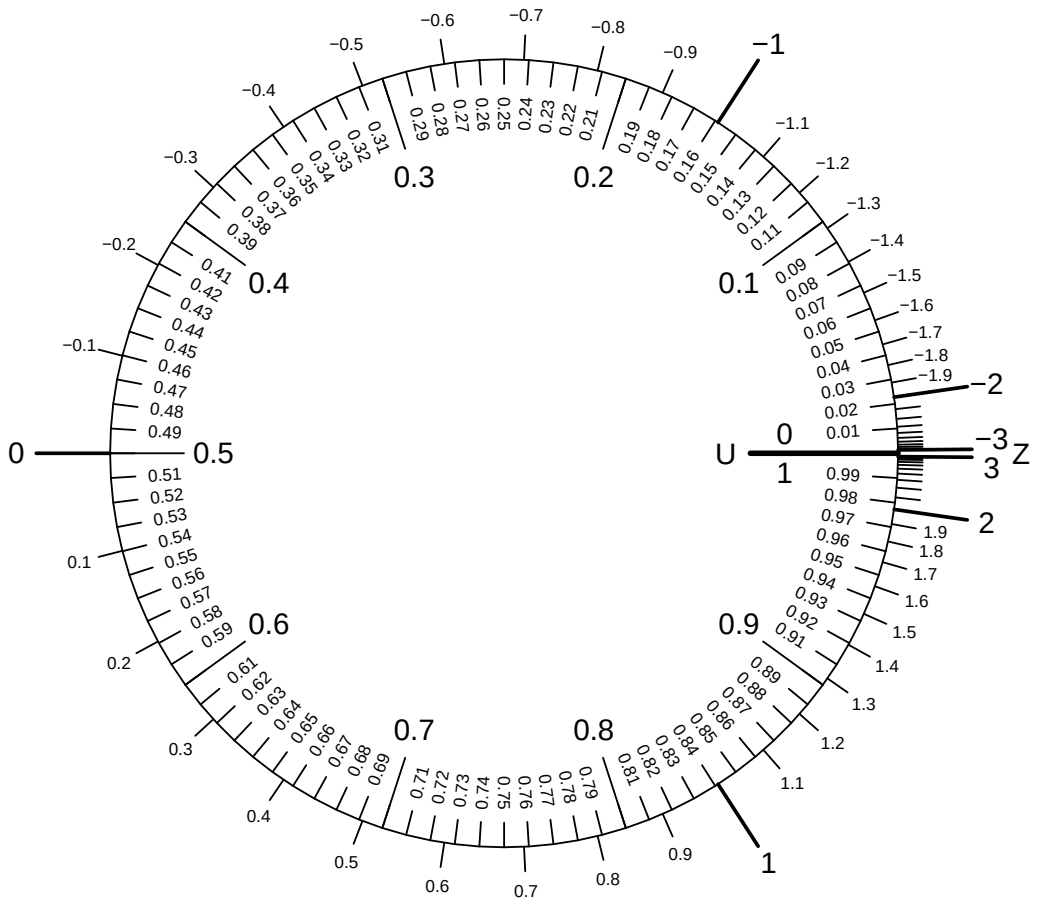
(f) $P(Z < -0.2)$ = 0.421

(g) $P(-0.9 < Z < -0.6)$ = 0.09

(h) $P(|Z| < 0.7)$ = 0.516

(i) z = 0.74

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 $P(|Z| > z) = 0.64$

(b) Determine z such that $P(Z > z) = 0.63$

(c) Determine z such that $P(Z < z) = 0.15$

(d) Evaluate $P(Z < -0.7)$

(e) Evaluate $P(-1.5 < Z < 0)$

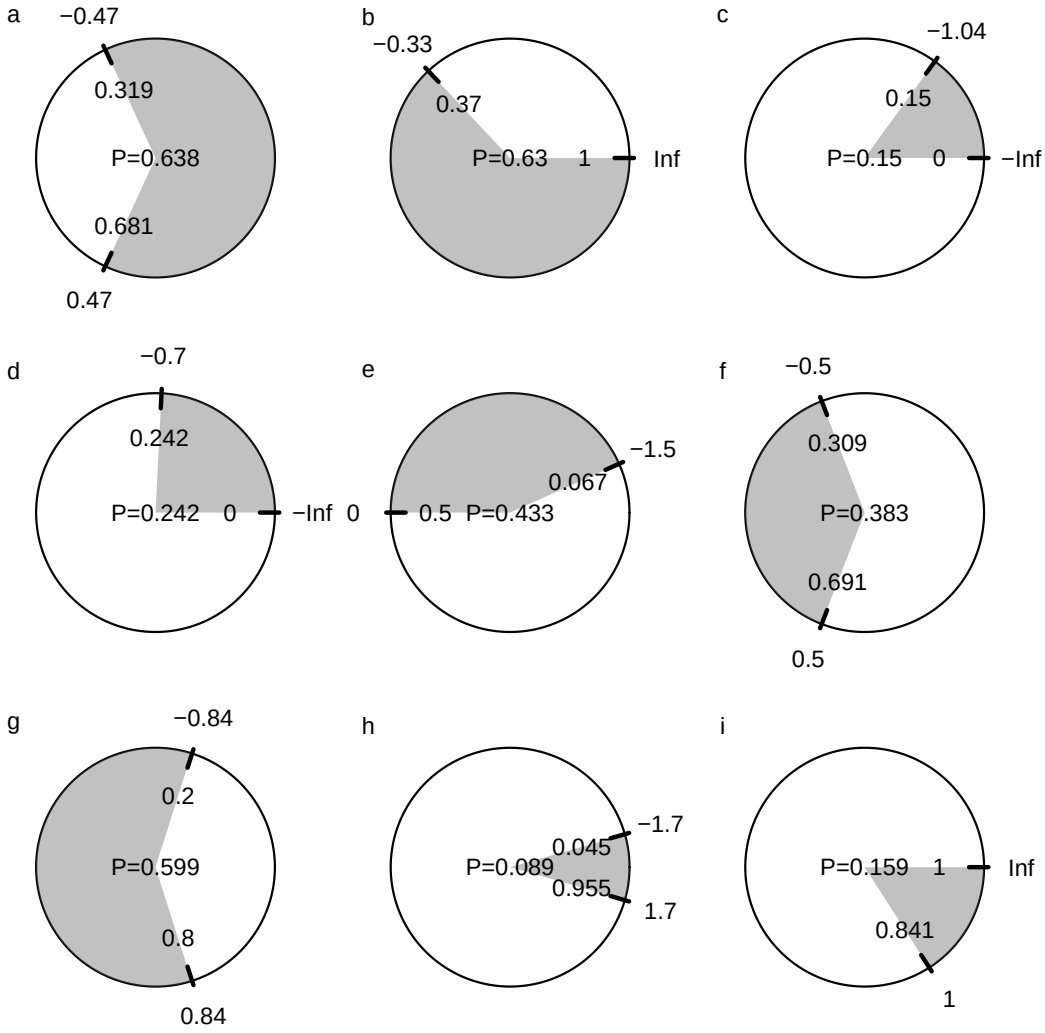
(f) Evaluate $P(|Z| < 0.5)$

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

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

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

Solution: The following circles are meant to help visualize how to get the answers.



(a) $z =$ 0.47

(b) $z =$ -0.33

(c) $z =$ -1.04

(d) $P(Z < -0.7) =$ 0.242

(e) $P(-1.5 < Z < 0) =$ 0.433

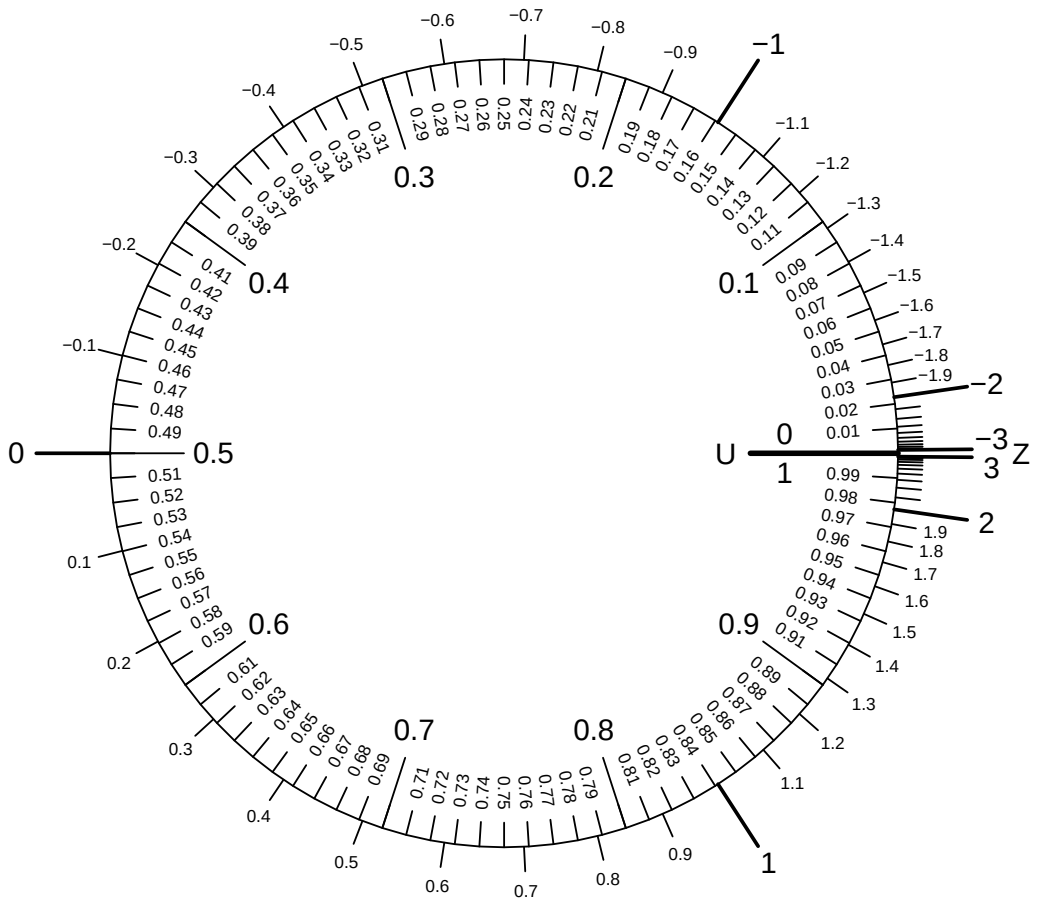
(f) $P(|Z| < 0.5) =$ 0.383

(g) $z =$ 0.84

(h) $P(|Z| > 1.7) =$ 0.089

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

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 $P(|Z| > 0.7)$

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

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

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

(e) Determine z such that $P(Z > z) = 0.16$

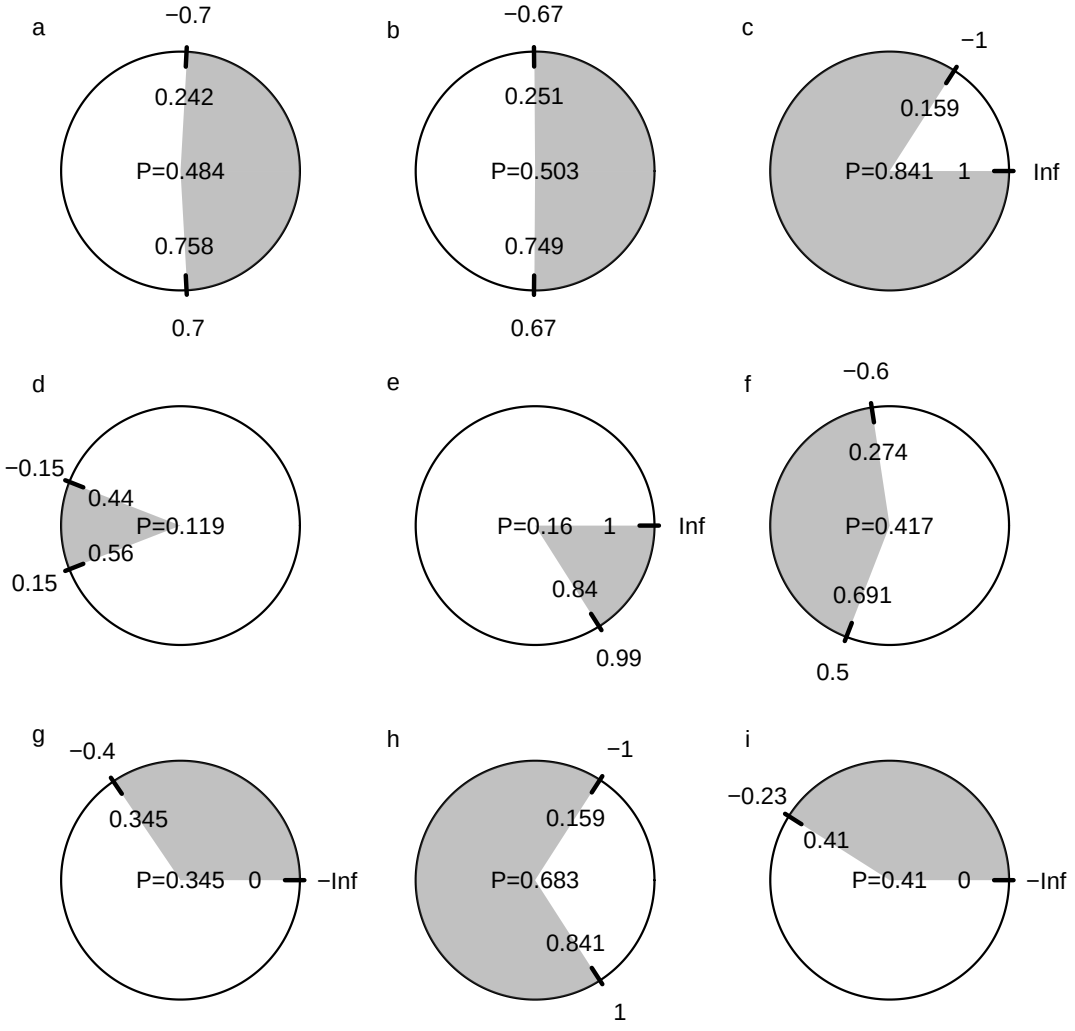
(f) Evaluate $P(-0.6 < Z < 0.5)$

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

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

(i) Determine z such that $P(Z < z) = 0.41$

Solution: The following circles are meant to help visualize how to get the answers.



(a) $P(|Z| > 0.7) =$ $\boxed{0.484}$

(b) $z =$ $\boxed{0.67}$

(c) $P(Z > -1) =$ $\boxed{0.841}$

(d) $z =$ $\boxed{0.15}$

(e) $z =$ $\boxed{0.99}$

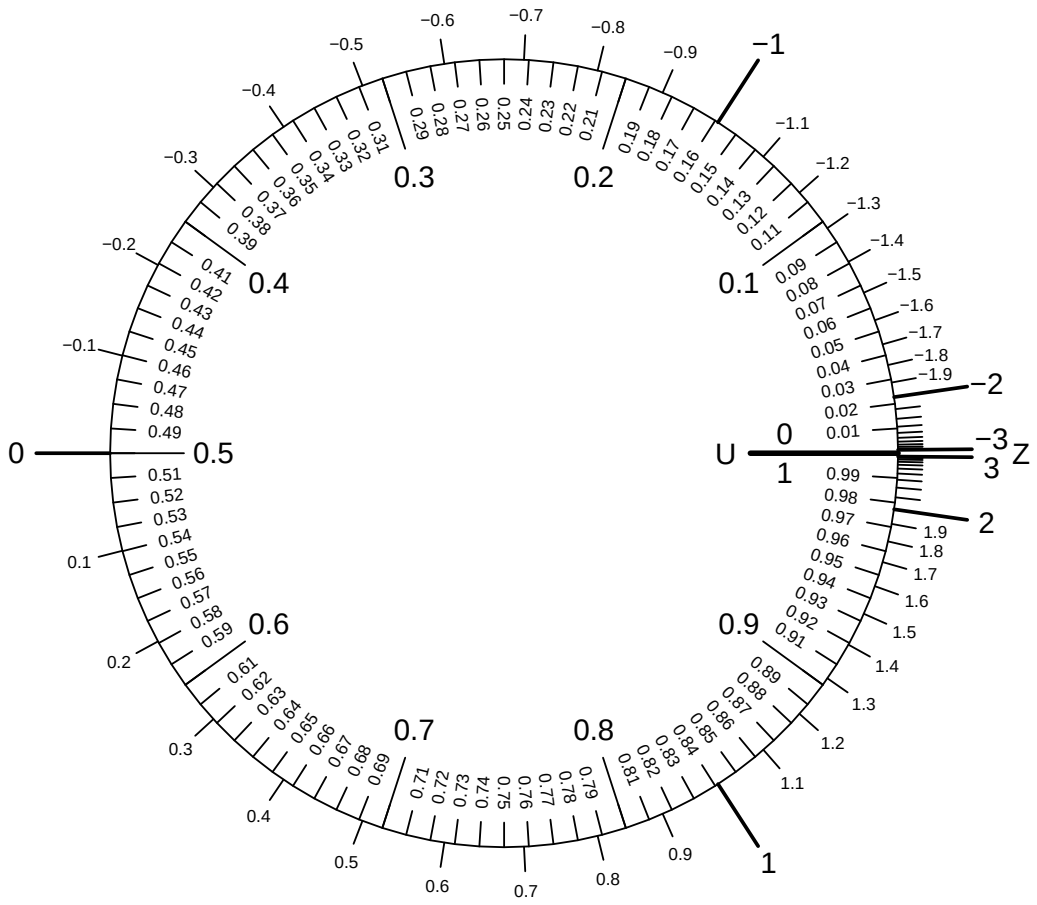
(f) $P(-0.6 < Z < 0.5) =$ $\boxed{0.417}$

(g) $P(Z < -0.4) =$ $\boxed{0.345}$

(h) $P(|Z| < 1) =$ $\boxed{0.683}$

(i) $z =$ $\boxed{\text{-0.23}}$

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 $P(|Z| < 1.2)$

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

(c) Evaluate $P(Z > 0.1)$

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

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

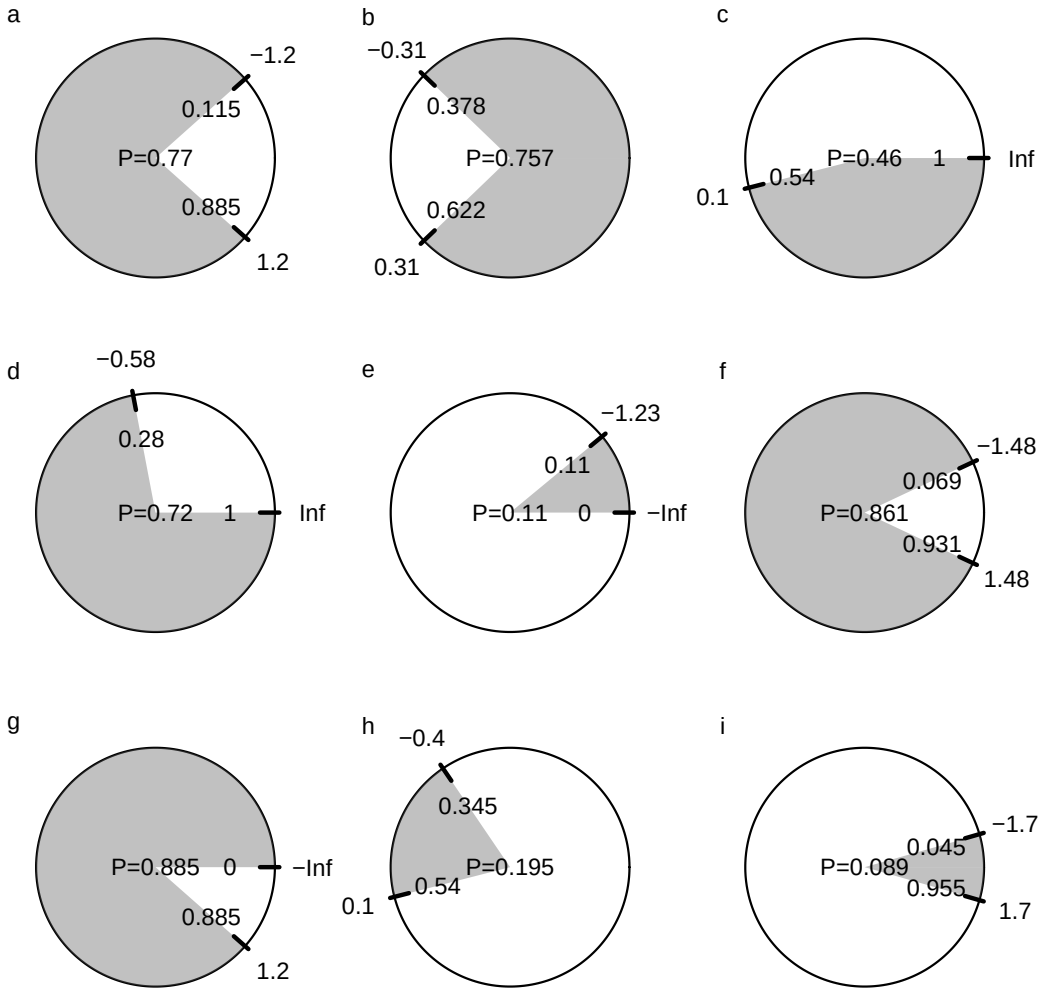
(f) Determine z such that $P(|Z| < z) = 0.86$

(g) Evaluate $P(Z < 1.2)$

(h) Evaluate $P(-0.4 < Z < 0.1)$

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

Solution: The following circles are meant to help visualize how to get the answers.



(a) $P(|Z| < 1.2) =$ 0.77

(b) $z =$ 0.31

(c) $P(Z > 0.1) =$ 0.46

(d) $z =$ -0.58

(e) $z =$ -1.23

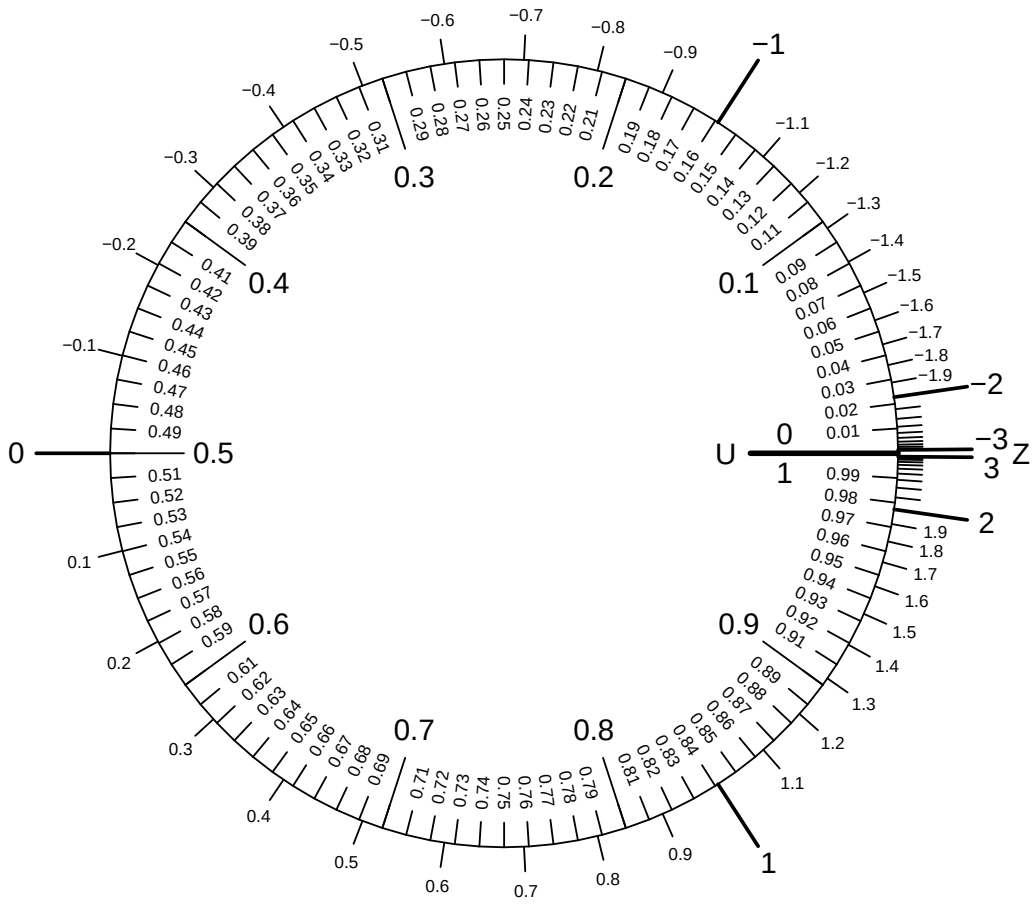
(f) $z =$ 1.48

(g) $P(Z < 1.2) =$ 0.885

(h) $P(-0.4 < Z < 0.1) =$ 0.195

(i) $P(|Z| > 1.7) =$ 0.089

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 $P(|Z| < 1)$

(b) Determine z such that $P(Z < z) = 0.76$

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

(d) Determine z such that $P(Z > z) = 0.6$

(e) Determine z such that $P(|Z| < z) = 0.46$

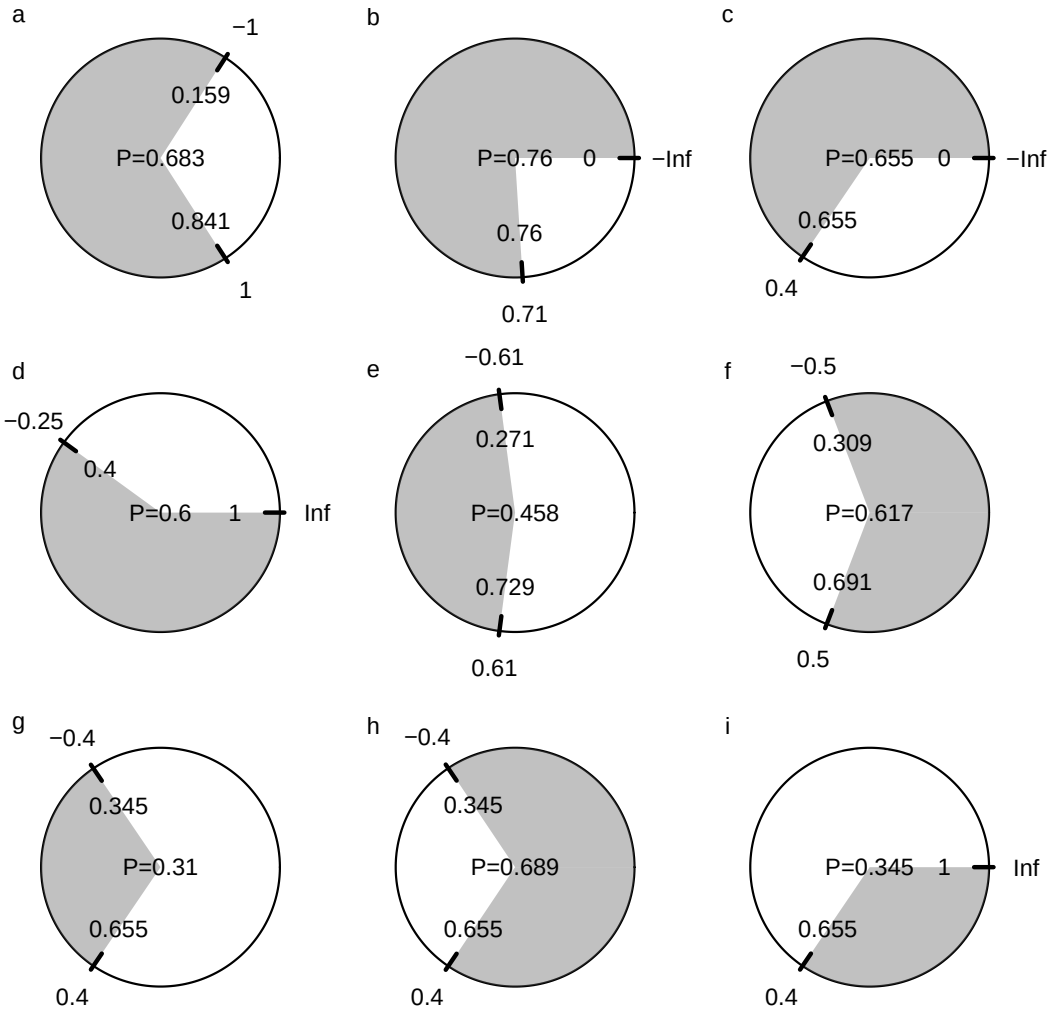
(f) Determine z such that $P(|Z| > z) = 0.62$

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

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

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

Solution: The following circles are meant to help visualize how to get the answers.



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

(b) $z =$ 0.71

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

(d) $z =$ -0.25

(e) $z =$ 0.61

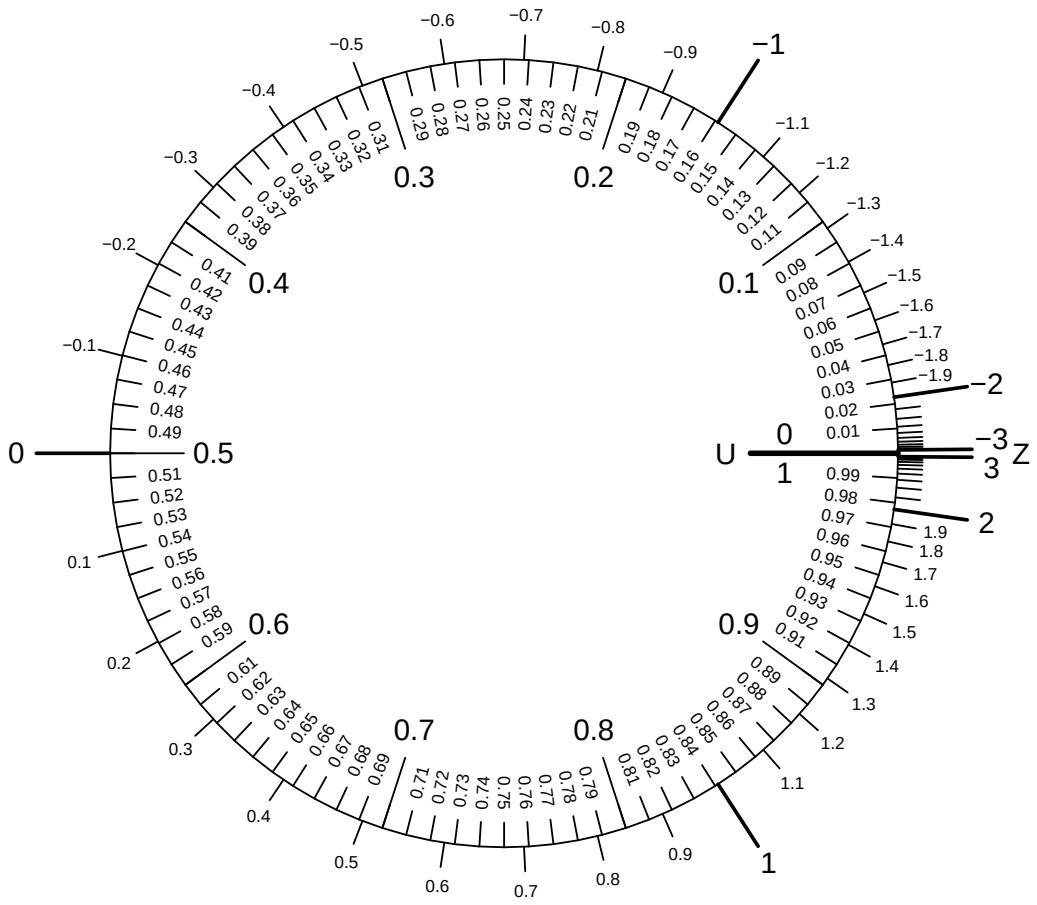
(f) $z =$ 0.5

(g) $P(-0.4 < Z < 0.4) =$ 0.31

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

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

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) Evaluate $P(Z > 0.3)$

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

(d) Evaluate $P(-1.3 < Z < 2.2)$

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

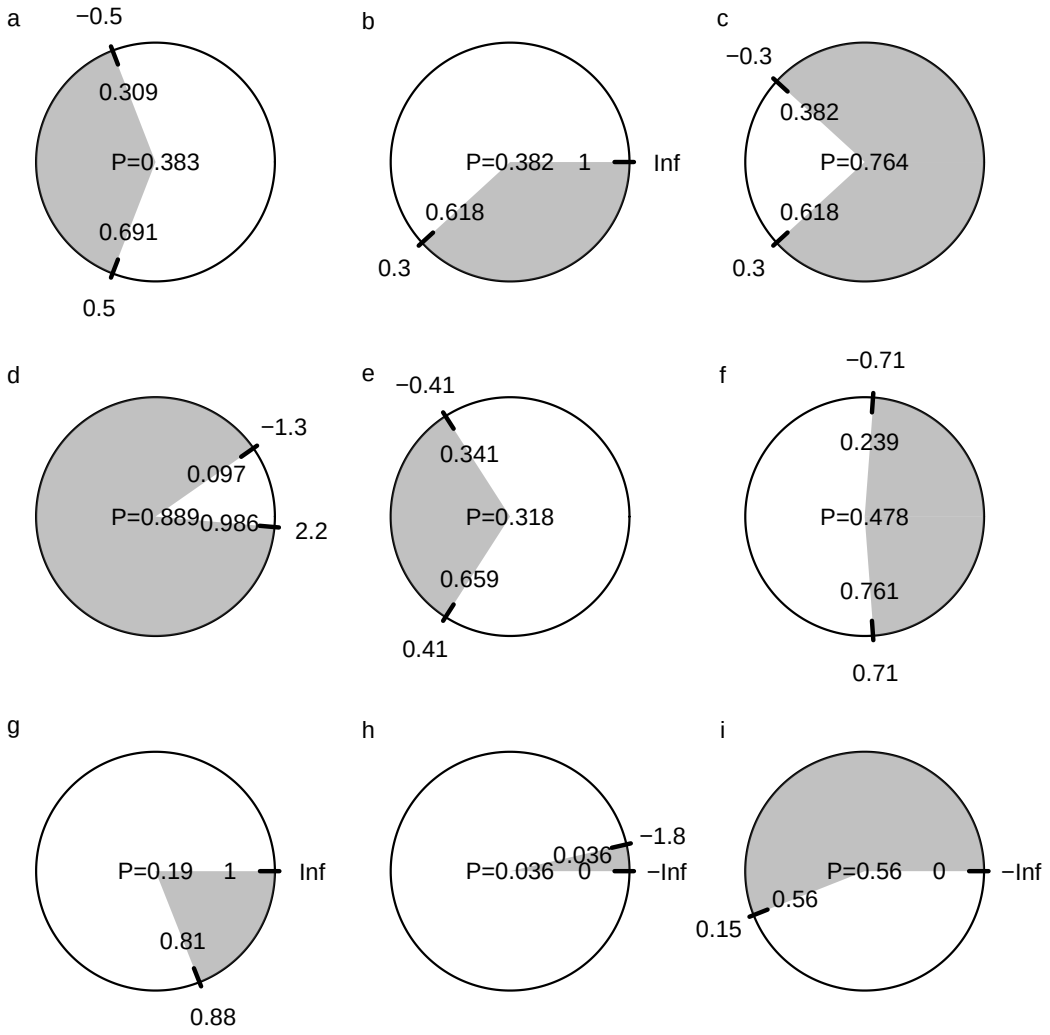
(f) Determine z such that $P(|Z| > z) = 0.48$

(g) Determine z such that $P(Z > z) = 0.19$

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

(i) Determine z such that $P(Z < z) = 0.56$

Solution: The following circles are meant to help visualize how to get the answers.



(a) $P(|Z| < 0.5) =$ $\boxed{0.383}$

(b) $P(Z > 0.3) =$ $\boxed{0.382}$

(c) $P(|Z| > 0.3) =$ $\boxed{0.764}$

(d) $P(-1.3 < Z < 2.2) =$ $\boxed{0.889}$

(e) $z =$ $\boxed{0.41}$

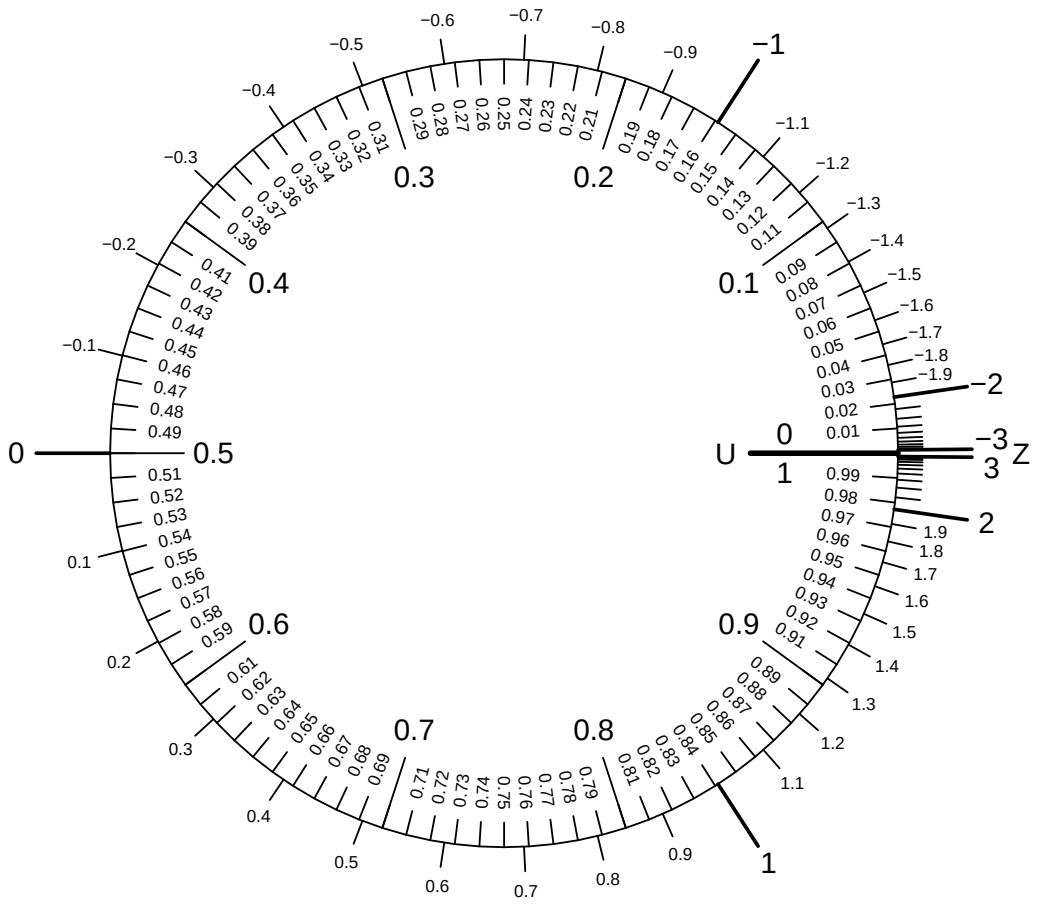
(f) $z =$ $\boxed{0.71}$

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

(h) $P(Z < -1.8) =$ $\boxed{0.036}$

(i) $z =$ $\boxed{0.15}$

21. **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 $P(|Z| > z) = 0.7$

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

(c) Evaluate $P(-1.6 < Z < -0.8)$

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

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

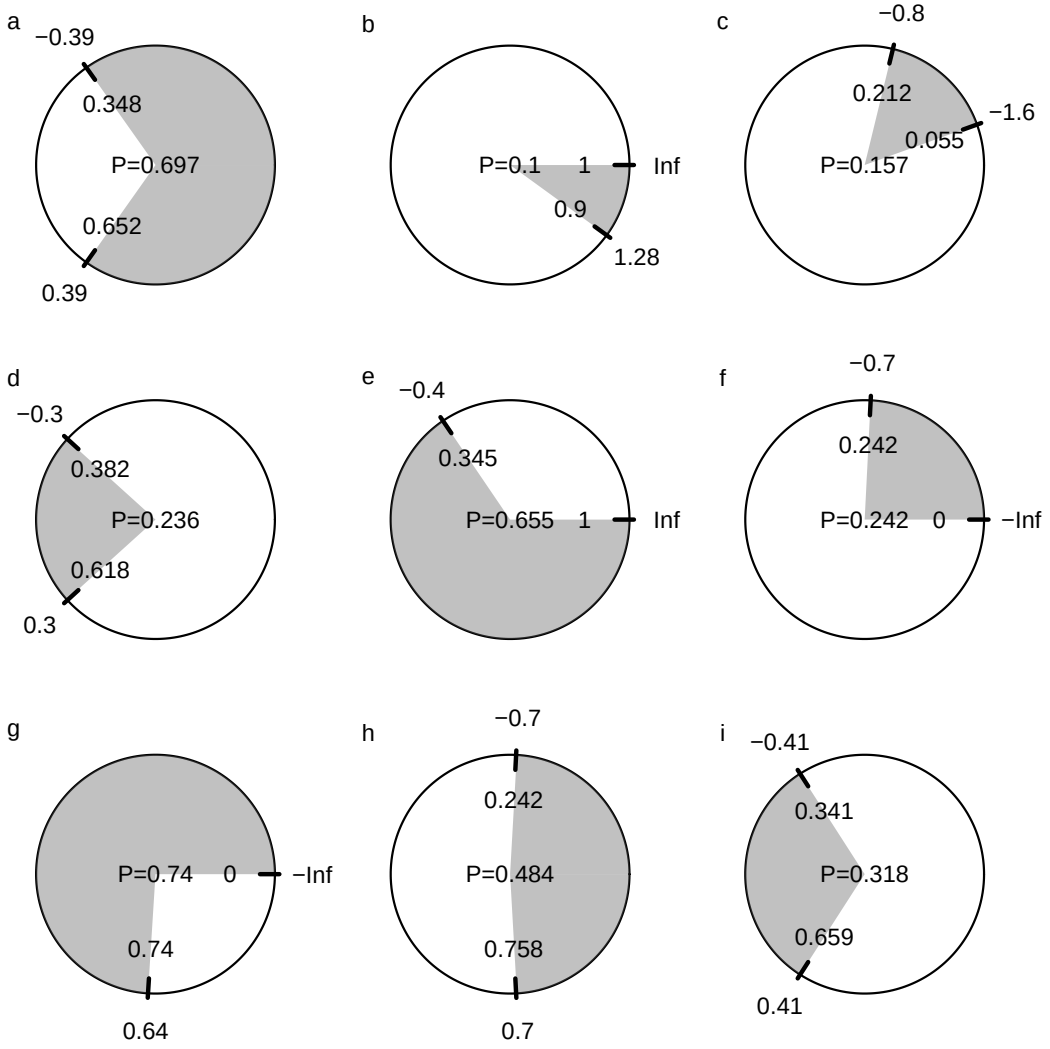
(f) Evaluate $P(Z < -0.7)$

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

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

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

Solution: The following circles are meant to help visualize how to get the answers.



(a) $z =$ 0.39

(b) $z =$ 1.28

(c) $P(-1.6 < Z < -0.8) =$ 0.157

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

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

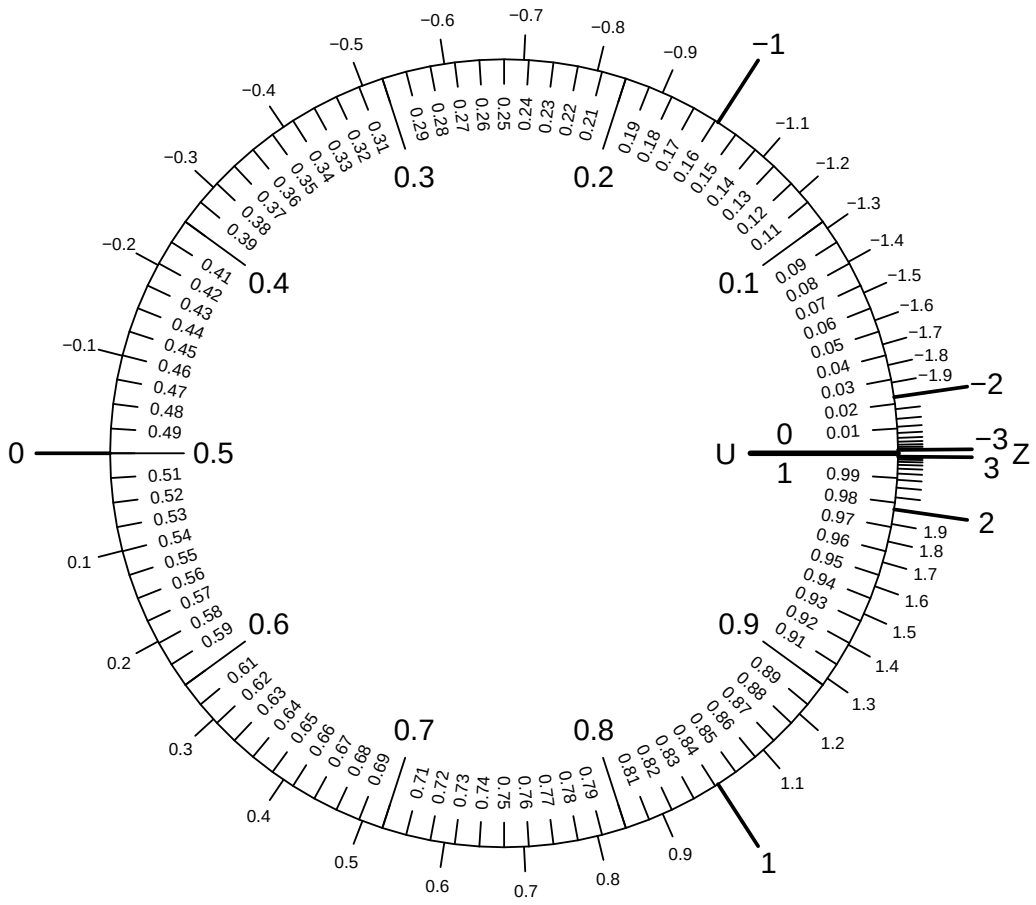
(f) $P(Z < -0.7) =$ 0.242

(g) $z =$ 0.64

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

(i) $z =$ 0.41

22. **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 $P(|Z| > z) = 0.9$

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

(c) Evaluate $P(0 < Z < 0.3)$

(d) Determine z such that $P(Z > z) = 0.57$

(e) Evaluate $P(Z < 0.6)$

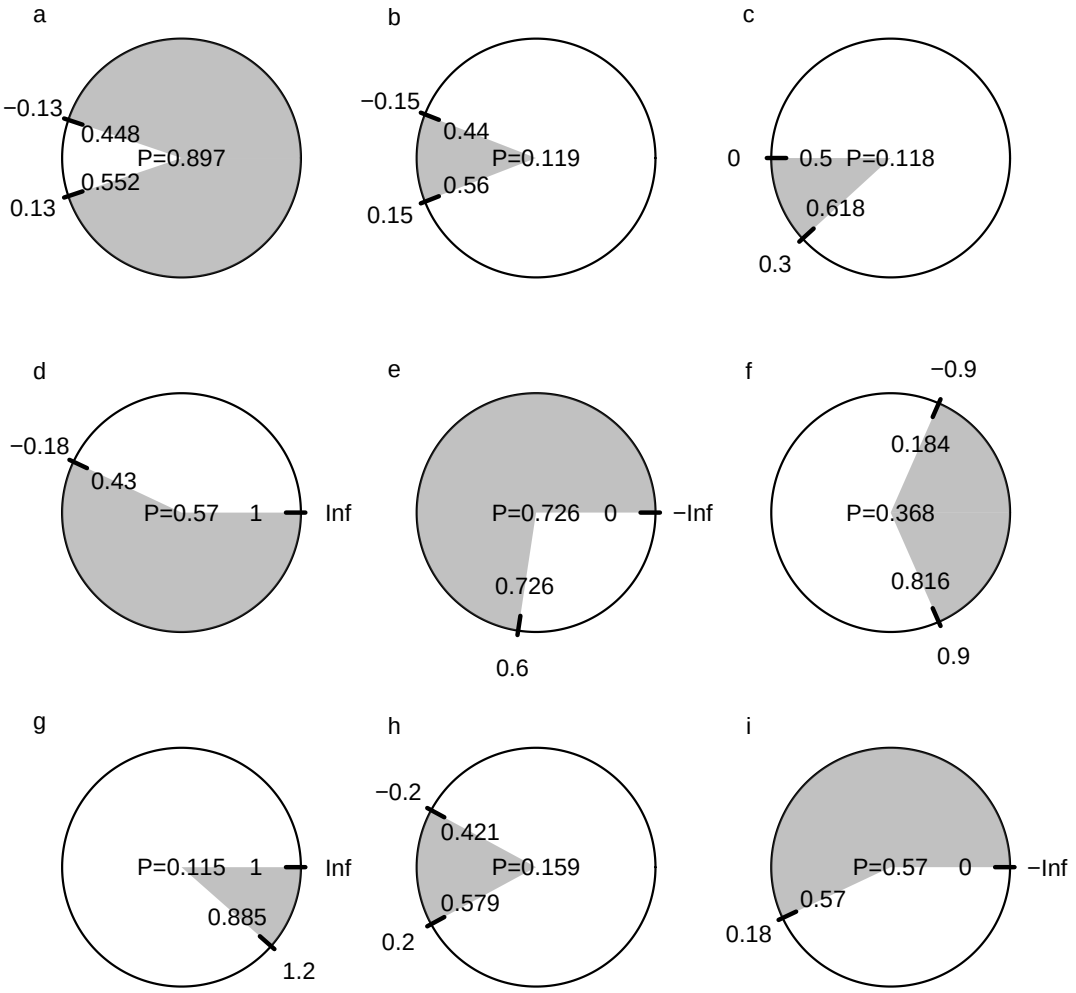
(f) Evaluate $P(|Z| > 0.9)$

(g) Evaluate $P(Z > 1.2)$

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

(i) Determine z such that $P(Z < z) = 0.57$

Solution: The following circles are meant to help visualize how to get the answers.



(a) $z =$ 0.13

(b) $z =$ 0.15

(c) $P(0 < Z < 0.3) =$ 0.118

(d) $z =$ -0.18

(e) $P(Z < 0.6) =$ 0.726

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

(g) $P(Z > 1.2) =$ 0.115

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

(i) $z =$ 0.18