

6. $\Pr(Z \leq -1) = A(-1) = 0.1587$
7. $A(-0.5) + (1 - A(0.5)) = 0.3085 + (1 - 0.6915)$
 $= 0.6170$
8. $\Pr(Z \geq -1.25) = 1 - A(-1.25) = 1 - 0.1056 = 0.8944$
9. $\Pr(Z \geq z) = 0.0401$
 $A(z) = 1 - 0.0401 = 0.9599$
 $z = 1.75$
10. $\Pr(Z \leq -z) + \Pr(Z \geq z) = 2A(-z) = 0.0456$
 $A(-z) = \frac{0.0456}{2} = 0.0228$
 $-z = -2.00$
 $z = 2.00$
11. $\Pr(-z \leq Z \leq z) = 0.5468$
 $A(-z) = \frac{1 - 0.5468}{2} = 0.2266$
 $-z = -0.75$
 $z = 0.75$
12. $\Pr(Z \geq -z) = 1 - A(-z) = 0.6915$
 $A(-z) = 1 - 0.6915 = 0.3085$
 $z = 0.50$
13. The 80th percentile of the standard normal distribution is approximately 0.84 (use table or InvNorm(0.80) on TI 83)
14. The 55th percentile of the standard normal distribution is approximately 0.13.
15. $\mu = 6, \sigma \approx 2$
16. $\mu = 80, \sigma \approx 10$
17. $\mu = 9, \sigma \approx 1$
18. $\mu = 3.0, \sigma \approx 0.10$
19. $\frac{4-8}{\frac{3}{4}} = -\frac{4}{1} \cdot \frac{4}{3} = -\frac{16}{3}$
20. $\frac{9\frac{1}{4}-8}{\frac{3}{4}} = \frac{5}{4} \cdot \frac{4}{3} = \frac{5}{3}$
21. $\frac{x-8}{\frac{3}{4}} = 10$
 $x = \frac{30}{4} + 8 = \frac{62}{4} = \frac{31}{2} = 15\frac{1}{2}$
22. $\frac{x-8}{\frac{3}{4}} = -2$
 $x = -\frac{3}{2} + 8 = \frac{13}{2} = 6\frac{1}{2}$
23. $\Pr(X \geq 9) = \Pr\left(Z \geq \frac{9-10}{\frac{1}{2}}\right)$
 $= \Pr(Z \geq -2)$
 $= 1 - \Pr(Z \leq -2)$
 $= 1 - 0.0228$
 $= 0.9772$
24. $\Pr(X \leq 32) = \Pr\left(Z \leq \frac{32-30}{4}\right)$
 $= \Pr(Z \leq 0.5)$
 $= A(0.5)$
 $= 0.6915$
25. $\Pr(6 \leq X \leq 10) = \Pr\left(\frac{6-7}{2} \leq Z \leq \frac{10-7}{2}\right)$
 $= \Pr(-0.50 \leq Z \leq 1.50)$
 $= 0.9332 - 0.3085$
 $= 0.6247$
26. $\Pr(X < 3.5) + \Pr(X > 4.5)$
 $= 1 - \Pr(3.5 \leq X \leq 4.5)$
 $= 1 - \left[A\left(\frac{4.5-4}{.4}\right) - A\left(\frac{3.5-4}{.4}\right) \right]$
 $= 1 - [A(1.25) - A(-1.25)]$
 $= 1 - (0.8944 - 0.1056)$
 $= 0.2112$