# Math 107. Homework #6. Solutions.

**7.24.** (a) $0.4370 + 0.5000 = 0.9370$;
(b) $0.4394 + 0.5000 = 0.9394$;
(c) $0.2389 - 0.1331 = 0.1058$;
(d) $0.3133 + 0.1736 = 0.4869$.

**7.26.** (a) $0.5000 - 0.4948 = 0.0052$;
(b) $0.3315 + 0.2389 = 0.5704$.

**7.30.** (a) Using the continuity correction we compute $\frac{55.5-53.9}{4.5} = 0.36$ which corresponds to 0.1406 (Table II). Thus, the answer is $0.5000-0.1406 = 0.3594$.

(b) Using the continuity correction we get $\frac{44.5-53.9}{4.5} = -2.09$ which corresponds to 0.4817 (Table II). Thus, the answer is $0.5000 - 0.4817 = 0.0183$.

**7.38.** $\mu = 50 \cdot 0.15 = 7.5$; $\sigma = \sqrt{50 \cdot 0.15 \cdot 0.85} \sim 2.525$.
(a) Since $\frac{5.5-7.5}{2.525} = -0.79$, the probability is $0.5000 + 0.2852 = 0.7852$;
(b) Since $\frac{10.5-7.5}{2.525} = 1.19$, the probability is $0.5000 + 0.3830 = 0.8830$.

**7.40.** $\mu = 48 \cdot 0.25 = 12$; $\sigma = \sqrt{48 \cdot 0.25 \cdot 0.75} = 3$.

(a) We have $\frac{15.5-12}{3} = 1.17$, and $\frac{14.5-12}{3} = 0.83$. Hence the answer is $0.3790 - 0.2967 = 0.0823$.

(b) We have $\frac{14.5-12}{3} = 0.83$, and so the probability is $0.5000-0.2967 = 0.2033$.

**7.42.** $\mu = 1000 \cdot 0.04 = 40$; $\sigma = \sqrt{1000 \cdot 0.04 \cdot 0.96} = 6.2$. Since $\frac{29.5-40}{6.2} = -1.69$, for the probability we are looking for we get $0.4545 + 0.5000 = 0.9545$.