MA 381 HW 9 Solutions

#4 (#7, pg. 281)

$$P(A) = P(\text{grade} \geq 90) = P\left(Z \geq \frac{90-67}{8}\right)$$

$$= 1 - \Phi(2.875)$$

$$= 1 - .9980 = \underline{0.002}$$

or $\underline{0.2\%}$

$$P(B) = P(80 \leq g \leq 90) = P(1.625 \leq Z \leq 2.875)$$

$$= \Phi(2.875) - \Phi(1.625)$$

$$= .9980 - .9484 = \underline{0.0496}$$

or $\underline{5\%}$

$$P(C) = P(70 \leq g \leq 80) = \Phi(1.625) - \Phi(.375)$$

$$= .9484 - .6480 = \underline{.3004}$$

or $\underline{30\%}$

$$P(D) = P(60 \leq g \leq 70) = \Phi(.375) - \Phi(-0.875)$$

$$= .6480 - .1922 = \underline{.4558}$$

or $\underline{46\%}$

$$P(F) = P(g \leq 60) = \Phi(-0.875) = \underline{.1922}$$

$\downarrow$

-0.87 or $\underline{19.22\%}$