

**STAT 100 SUMMER II 2001 (PROFESSOR GREEN)**  
**SOLUTIONS TO ASSIGNED PROBLEMS DUE**  
**AUGUST 3**

Problem 2

- (a-c) .25
- (d) 0 .

Problem 6. The twentieth percentile is .4.

Problem 14. Since the normal table gives the area to the left, and the total area is 1, you can compute the area to the right by subtracting the area to the left from 1. Alternatively, you can exploit the symmetry of the normal distribution by changing the sign of  $z$  and looking up the area to the left.

- (a)  $1 - .883 = .117$
- (b)  $1 - .7324 = .2676$
- (c)  $1 - .123 = .877$
- (d) (splitting the difference and rounding back)  $1 - .0637 = .9363$

Problem 16.

- (a)  $.7734 - .2266 = .5468$
- (b)  $.9082 - .0918 = .8164$
- (c)  $.9788 - .6331 = .3457$
- (d)  $.8933 - .2282 = .6651$

Problem 18.

- (a)  $z = -.61$
- (b)  $-z = -.525$ ;  $z = .525$
- (c) The area to the left of  $z$  is  $.5 + .38 = .88$ ;  $z = 1.175$ .
- (d) The area to the left of  $-1$  is .1587. Therefore, the area to the left of  $z$  is  $.1587 + .762 = .9207$ , so that  $z = 1.41$ .
- (e) The area between 0 and  $z$  is  $\frac{1}{2}.7416 = .3708$ . The area to the left of  $z$  is  $.5 + .3708 = .8708$ .  $z = 1.13$ .
- (f) The area to the left of 1.82 is .9656. Then the area to the left of  $z$  is  $.9656 - .6500 = .3156$ . It follows that  $z = -.48$ .

Problem 20.

- (a) .6985
- (b) .3015
- (c)  $1 - .9633 = .0367$
- (d)  $1 - .0367 = .9633$
- (e)  $.9821 - .0968 = .8853$
- (f)  $.7881 - .5239 = .3642$
- (g)  $.2946 - .0526 = .2420$
- (h)  $.9495 - .0505 = .8990$

Problem 24.

- (a) .6554
- (b)  $-.25$
- (c) .8023
- (d) 1.04