(4) $\mu = 45$ Z-score of -2.00 for $X = 55$

is incorrect because a minus sign means the score must be below the mean of 45

(6) $\mu = 100$ $\sigma = 10$ $z = \frac{X - \mu}{\sigma}$

a) $X = 106$ $z = \frac{106 - 100}{10} = \frac{6}{10} = +.60$

$X = 125$ $z = \frac{125 - 100}{10} = \frac{25}{10} = +2.50$

$X = 93$ $z = \frac{93 - 100}{10} = \frac{-7}{10} = -.70$

$X = 90$ $z = \frac{90 - 100}{10} = \frac{-10}{10} = -1.00$

$X = 87$ $z = \frac{87 - 100}{10} = \frac{-13}{10} = -1.30$

$X = 118$ $z = \frac{118 - 100}{10} = \frac{18}{10} = +1.80$

(6b) $X = M + ZT$

$Z = 1.20$ $\quad X = 100 + (1.20)(10) = 112$

$Z = 2.30$ $\quad X = 100 + (2.30)(10) = 123$

$Z = -0.80$ $\quad X = 100 + (-.80)(10) = 92$

$Z = -0.60$ $\quad X = 100 + (-.60)(10) = 94$

$Z = 0.40$ $\quad X = 100 + (.40)(10) = 104$

$Z = -3.00$ $\quad X = 100 + (-3.00)(10) = 70$

$100 - 30 = 70$

(14) $M = 65$ my score $X = 73$

I would prefer a ~~score~~ T of 8 because

with $T = 8$ location of my score is

$$Z = \frac{73-65}{8} = \frac{8}{8}$$

$$= +1.00 \quad \text{(higher)}$$

versus with $T = 16$

$$Z = \frac{73-65}{16} = \frac{8}{16}$$

$$= +0.50 \quad \text{(lower)}$$

(16) Psych exam $\mu = 72$ $\sigma = 12$

my score $x = 78$

$$\therefore \quad z = \frac{x-\mu}{\sigma} = \frac{78-72}{12} = \frac{6}{12} = +.50$$

Eng. Exam $\mu = 56$ $\sigma = 5$

my score $x = 66$

$$\therefore \quad z = \frac{x-\mu}{\sigma} = \frac{66-56}{5} = \frac{10}{5} = +2.00$$

much higher position

I expect a higher grade on the English exam

(18) $\mu = 90$ $\sigma = 10$

Sharon 9 pts above mean $\therefore x = 99$

$$z = \frac{99-90}{10} = \frac{9}{10} = +.90$$

Jill's z-score is $+1.20$ $\therefore x = 90 + (1.20)(10)$
$= 90 + 12$
$= 102$

Steve is ½ standard deviation above the mean
$\therefore$ his $z = +.50$ $\therefore$ $x = 90 + 5 = 95$

Ramon's score of $X = 110$

$z = \frac{X - \mu}{\sigma}$ $\quad z = \frac{110 - 90}{10} = \frac{20}{10} = +2.00$

		z	X
Highest	Ramon	+2.00	110
	Jill	1.20	102
	Sharon	.90	99
Lowest	Steve	.50	95