a. Number of items = 30
Mean = 22
Standard deviation = 8

Reliability of the test using Kuder-Richardson Formula 21

$= \frac{30}{30-1}\left(1-\frac{22(30-22)}{30\,(8)^2}\right) = 1.03\left(1-\frac{22(8)}{30(64)}\right) = 1.03\left(1-\frac{176}{1920}\right) = 1.03(0.09) = 1.03(0.91) = 0.93$

Answer = 0.93

b. True score variance
It is a very high positive correlation.
0.93 is the total variance that comes from true score variance.

Error variance
0.07 is the variance that comes from error variance

c. Standard error of measurement (S.E.M)

68% = 30 ± 2.22 = 27.78 ± 32.22
True scores will be found between 27.78 and 32.22

98% = 30 ± 2(2.22) = 30 ± 4.44 = 25.26 ± 34.44
True scores will be found between 25.26 and 34.44

d. 68% Confidence interval
20 ± 2.22 = 17.78 ± 22.22

Interpretation: True scores will be found between 17.78 and 22.22

95% Confidence interval
20 ± 2(2.22) = 20 ± 4.44 = 15.56 ± 24.44

Interpretation: True scores will be found between 15.56 and 24.44