SAMPLE TEST #2
ANSWERS

Question 1
Theoretical probability = Mathematical prediction of what the probability should be
Empirical probability = Actual probability obtained from experience

Question 2
Law of large numbers = As the number of trials increases, the empirical probability will approach the theoretical probability.

Question 3
0

Question 4
1

Question 5
$1 - \frac{4}{5} =$ **$\frac{1}{5}$ or .2**

Question 6
No (it's bigger than 1)

Question 7
Yes (it's a decimal between 0 and 1)

Question 8
Yes

Question 9
Yes

Question 10
No (it's negative)

Question 11
No (it's bigger than 1)

Question 12
$\frac{3}{10}$ or .3

Question 13
$\frac{2}{10}$ or .2

Question 14
$4 + 3 = 7$ … so **$\frac{7}{10}$ or .7**

Question 15
$\frac{1}{10} * \frac{1}{10} =$ **$\frac{1}{100}$ = .01**

Question 16
$\frac{4}{10} * \frac{2}{9} =$ **$\frac{8}{90}$ or $\frac{4}{45}$ or .08888…**

Question 17
$\frac{12}{28}$ or $\frac{3}{7}$ or .428571…

Question 18
$\frac{20}{28}$ or $\frac{5}{7}$ or .714285…

Question 19
$\frac{2}{28} * \frac{2}{28} =$ **$\frac{4}{784}$ or $\frac{1}{196}$ or .0051020408**

Question 20
$12 + 6 - 3 =$ **15%**

Question 21
$100 - 15 =$ **85%**

<u>Question 22</u>
    100 * 438 = **43,800**
<u>Question 23</u>
    26 * 26 * 10 * 10 * 10 = **676,000**
<u>Question 24</u>
    2 * 2 * 2 * 2 * 2 * 2 * 2 * 2 * 2 * 2 = 2^{10} = **1024**

<u>Problem 25</u>
    $^4/_{52}$ or $^1/_{13}$ or .0769230…
<u>Problem 26</u>
    $^{13}/_{52}$ or ¼ or .25
<u>Problem 27</u>
    $^1/_{52}$ or .01923076…
<u>Problem 28</u>
    $^4/_{52}$ + $^{13}/_{52}$ − $^1/_{52}$ = **$^{16}/_{52}$ or $^4/_{13}$ or .307692…**

<u>Problem 29</u>
    $^{13}/_{52}$ * $^{12}/_{51}$ = **$^{156}/_{2651}$ or $^1/_{17}$ or .0588235294…**

<u>Problem 30</u>
    $^{13}/_{52}$ * $^4/_{52}$ = **$^{52}/_{2704}$ or $^1/_{52}$ or .0192307692…**

<u>Problem 31</u>
    P (how many different ORDERS)
<u>Problem 32</u>
    C (same job)
<u>Problem 33</u>
    C (order doesn't matter)
<u>Problem 34</u>
    P (different prizes)

<u>Problem 35</u>
    27 nCr 7 = **888,030**
<u>Problem 36</u>
    60 nP5 6 = **655,381,440**

<u>Problem 37</u>
    1/2500*100+5/2500*75+25/2500*50+50/2500*25+2419/2500*10 = **10.866 or 11%**

<u>Problem 38</u>
    1/1000*1600+3/1000*275+20/1000*25 = **2.925 or $2.93**

<u>Problem 39</u>
    Negative (below average)
<u>Problem 40</u>
    Positive (above average)
<u>Problem 41</u>
    (9-44.25)/26.13 = **-1.35**
<u>Problem 42</u>
    (70-44.25)/26.13 = **0.99**
<u>Problem 43</u>
    -.928 = (x – 44.25)/26.13 … appx. 20 … so **Quenton**
<u>Problem 44</u>
    1.636 = (x – 44.25)/26.13 … appx. 87 … so **Allison**

Problem 45
(37.95-49.52)/12.14 = **-.95**
Problem 46
3.82 = (x - 49.52)/12.14 … **$95.89**

Problem 47
68%, **95%**, and **99.7%**

Problem 48
C (technically, though it says "B" – "below average" because negative)
Problem 49
A (positive, because NBA stars are likely to be taller than average)

Problem 50
.0336 (tail table)
Problem 51
.0559 – .0446 = **.0113**
Problem 52
.9778 (big table)
Problem 53
.0202 (tail table)
Problem 54
1 – .1515 – .0096 = **.8389**
Problem 55
.0548 – .0096 = **.0452**
Problem 56
.9633 (big table)
Problem 57
1 – .1469 – .0013 = **.8518**

Problem 58
(35-55)/11 = **-1.82**
Problem 59
.0344
Problem 60
(40-55)/11 = **-1.36**
Problem 61
(70-55)/11 = **1.36**
Problem 62
1 – .0869 – .0869 = **.8262**

Problem 63
Look up number closest to .1500 in tail table … closest is .1492 … **z = 1.04**
Problem 64
Look up number closest to .6700 in big table … .6700 exactly is in table … **z = 0.44**