Students will be able to assign probabilities to events and apply basic rules of probability in everyday life.

Vocabulary

Experiment - What is being done or studied.
ie. Rolling a die

sample space - the results ie.

example: the Sample Space if I role a dice is a list of all the outcomes
ie: {1, 2, 3, 4, 5, 6}

Event - what is important
ie. rolling an even number

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Three ways to think of probability -

<u>intuition</u> -
an estimate based on past experience, judgment, or opinion.

<u>Relative frequency</u> $= \dfrac{f}{n}$

where f is the frequency of an event and n is the sample size.

<u>Formula</u> (each outcome is equally likely) $= \dfrac{\text{Number of favorable outcomes}}{\text{Number of possible outcomes}}$

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Probability

Probability is a numerical measure between 0 and 1 that describes the likelihood that an event will occur.

0 = can never happen
1 = guaranteed to happen

Which of the following numbers cannot be the probability of some event?

a) 0.71   b) 4.1   c) 1/8   d) -0.5 $\frac{10}{7}$
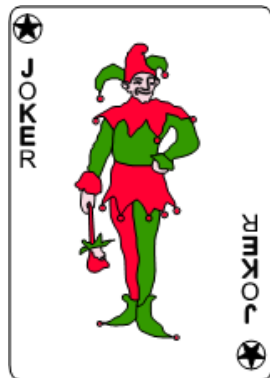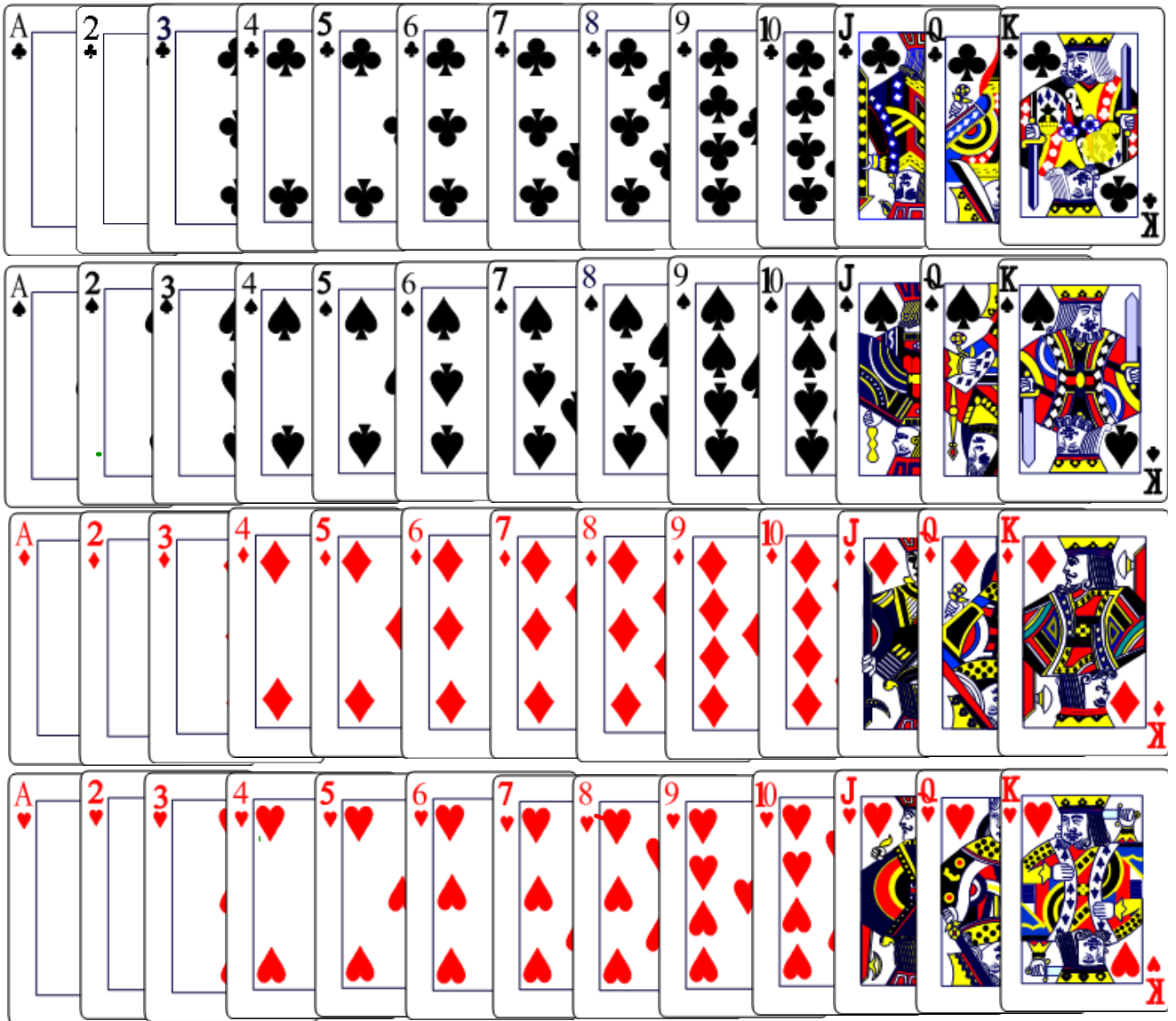
e) 0.5   f) 0   g) 1   h) 150%

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$$P(A) = \frac{\text{favorable outcomes}}{\text{possible outcomes}}$$

.02

2%

If I pick one card at random from the deck of cards, then find the probability.

$P(\text{odd}) = \dfrac{16}{52} = \dfrac{4}{13} = .308 = 30.8\%$ $P(\text{ace of clubs}) = \dfrac{1}{52} = .019$

.31 = 31%   1.9%

$P(4) =$

$P(K) = \dfrac{4}{52} = \dfrac{1}{13} = .077 = 7.7\%$

$P(\geq 3) = \dfrac{32}{52} = \dfrac{16}{26} = \dfrac{8}{13} = .615$ $P(\text{not } 3) = \dfrac{48}{52} = \dfrac{12}{13} = .923 = 92.3\%$

61.5%

$P(9) =$ $P(\text{Red Ace}) =$

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Draw a card from the standard deck.

P(4) = $\dfrac{4}{52} = \dfrac{1}{13} =$

P(Not 4) = $\dfrac{48}{52}$

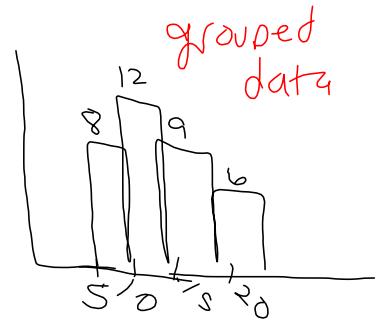The complement of event A is the event that A does not occur. A^c designates the complement of event A. Futhermore,

   1. P(A) + P(A^c) = 1

   2. P(event A does not occur) = P(A^c) = 1 - P(A)

W.N. <u>Test</u> practice

Find the sample mean & standard dev.

$$\overline{X} = 11.86 \qquad S_x = 5.16$$

grouped data

Find a <u>8%</u> trimmed mean

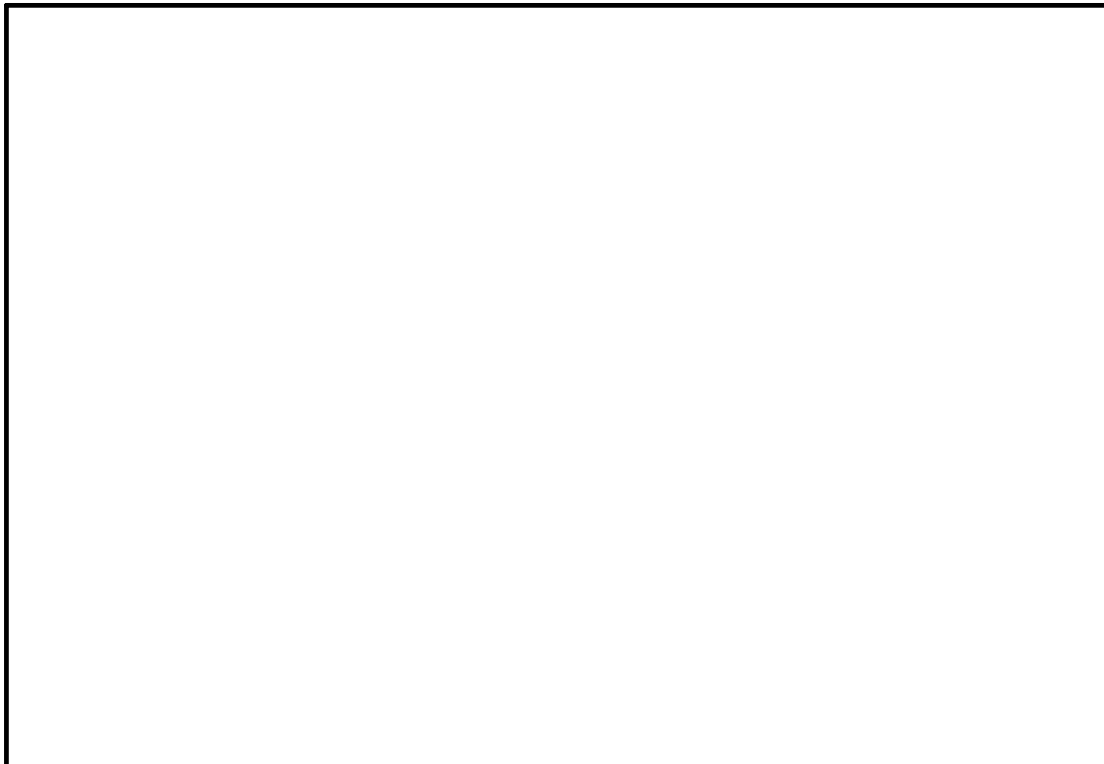| 12 | 15 | 20 | 10 | 7 | 8 | 6 | 8 | 9 | 11 |
| 7 | 8 | 2 | 12 | 15 | 9 | 3 | 6 | 10 | 12 |

put into L_1
put into Ascending order

$$(.08)(20)$$

$$1.60$$

$$2$$

Remove smallest 2 & largest 2 $\overline{X} = 9.38$

82. Horizontal & vertical lines (10-23)

83. Slope-intercept intro   (10-23)

84. Graph from slope-intercept form
                                    (10-23)

85. Slope-intercept equation
    from a graph   (10-24)

Test Friday 10-27-17