

2. What is the third quartile of the data set
 $\{12, 5, 8, 8, 10, 7, 8\}$?

3, 5, 5, 6, 7, 8, 10, 12
 $\frac{18}{5}$ med 6.5 $\frac{30}{9}$

4. Given the stem and leaf plot of female ages shown below, what percent of females were younger than 20?

Female Ages

Stem	Leaf
1	1 3 0
2	6 3 2 1 3
3	7 0 1 3 0
4	1 2 2
5	5 3 2 2

Key: 3 | 7 = 37

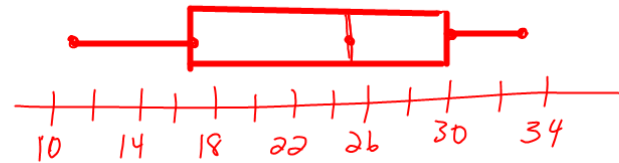
$$\frac{3}{20} = .15$$

15%

$\{30, 25, 11, 24, 33, 29, 17\}$

min = 11
 $1^{st} Q = 17$
 median = 25
 $3^{rd} Q = 30$
 max = 33

11, 17, 24, 25, 29, 30, 33
 $\frac{1}{1^{st}}$ med. $\frac{3}{3^{rd}}$



7. What is theoretical probability? → What should happen

- ☒ A. the ratio of favorable outcomes to possible outcomes
- ☐ B. the ratio of favorable outcomes to unfavorable outcomes
- ☐ C. the ratio of successes to total trials
- ☐ D. the ratio of successes to failed trials

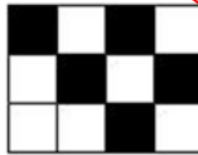
8. What is experimental probability? → What did happen

- ☐ A. the ratio of favorable outcomes to possible outcomes
- ☐ B. the ratio of favorable outcomes to unfavorable outcomes
- ☒ C. the ratio of successes to total trials
- ☐ D. the ratio of successes to failed trials

9. Refer to the figure below. At the carnival, Willie Winn needed to land the ball on the shaded area to get a prize. He played the game 60 times and received 24 prizes. What was Willie Winn's experimental probability and theoretical probability?

A. ~~$\frac{3}{5}$ and $\frac{5}{7}$~~
C. $\frac{2}{3}$ and $\frac{5}{12}$

B. ~~$\frac{2}{5}$ and $\frac{5}{7}$~~
D. $\frac{2}{5}$ and $\frac{5}{12}$



exp $\frac{24}{60} = \frac{2}{5}$ theory $\frac{5}{12}$

10. Miho rolls two dice 100 times. Given the sample space shown below, approximately how many times can Miho expect to roll a sum of eight?

- A. 5
B. 6
C. 14
D. 50

1,1	1,2	1,3	1,4	1,5	1,6
2,1	2,2	2,3	2,4	2,5	2,6
3,1	3,2	3,3	3,4	3,5	3,6
4,1	4,2	4,3	4,4	4,5	4,6
5,1	5,2	5,3	5,4	5,5	5,6
6,1	6,2	6,3	6,4	6,5	6,6

$\frac{5}{36} = \frac{x}{100}$

$\frac{36x}{x} = \frac{500}{36}$

$x = 13.9$

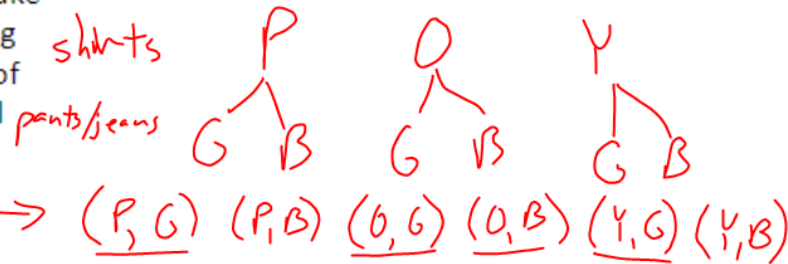
$\frac{5}{36} \times 100 = 13.9$

11. Alex has a pink shirt, an orange shirt, and a yellow shirt. She also has gray pants and blue jeans. Make a sample space to help you answer the following question. If she chooses one shirt and one pair of pants, what is the probability that her outfit will include an orange shirt or gray pants?

A. $\frac{2}{3}$
C. $\frac{1}{6}$

B. $\frac{4}{3}$
D. $\frac{1}{2}$

sample space →



$\frac{4}{6}$

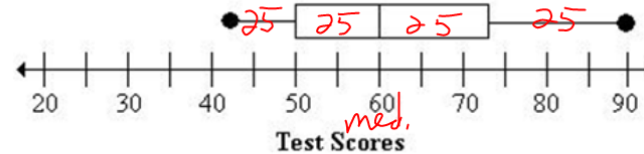
12. In algebra class, 30% of the students are fifteen years old, 60% are fourteen years old, and 10% are sixteen years old. 10 students are to be chosen at random to take an exam. How many of the students, chosen at random, would you predict to be fifteen years old?

$$30\% = .3 = \frac{3}{10}$$

$$.3 \times 10 = 3$$

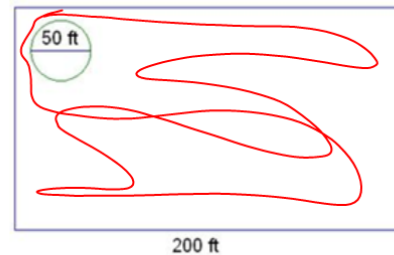
$$\frac{3}{10} \times 10 = 3$$

14. The following box-and-whisker plot shows the test scores from Mr. Nguyen's class. What percentage of the students scored 60 points or higher?



50%

13. Parachutists jump from an airplane and land in the rectangular field shown. What is the probability that a parachutist avoids the big oak tree represented by the circle in the diagram? (Assume that the person is unable to control where the specific landing point is within the rectangle.)



A. 0.055
C. 0.788

B. 0.218
D. 0.945

$$\begin{aligned} A_{\text{rectangle}} &= lw \\ &= (180)(200) \\ &= 36,000 \end{aligned}$$

$$\begin{aligned} A_{\text{circle}} &= \pi r^2 \\ &= \pi (25)^2 \\ &= 625\pi \end{aligned}$$

$$\text{hit} + \frac{625\pi}{36,000} \approx .055 = 1 - .055 = .945$$

$$\text{avoid} \quad \frac{36,000 - 625\pi}{36,000} = .945$$