

# Mr. Ward Answer Key

## Review

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4. (Fundamental Counting Principle)

$$\underline{7} \cdot \underline{10} \cdot \underline{10} = \underline{10} \cdot \underline{10} \cdot \underline{10} = 7,000,000$$

$$6. {}_{14}P_6 = \frac{14!}{(14-6)!} = \frac{14 \cdot 13 \cdot 12 \cdot 11 \cdot 10 \cdot 9 \cdot 8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1}{\cancel{8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1}} = 2,162,160 \text{ visits}$$

$$8. {}_6C_3 = \frac{6!}{3!(6-3)!} = \frac{6 \cdot 5 \cdot 4 \cdot \cancel{3} \cdot \cancel{2} \cdot 1}{3 \cdot 2 \cdot 1 \cdot \cancel{3} \cdot \cancel{2} \cdot 1} = \frac{120}{6} = 20 \text{ groups of entrées}$$

10. (36 possibilities when rolling 2 dice)

$$\frac{\text{favorable outcomes}}{\text{total outcomes}} = \frac{10}{36} = \frac{5}{18}$$

12. (same idea as #10)

$$\frac{\text{fav. outcomes}}{\text{total outcomes}} = \frac{33}{36} = \frac{11}{12}$$

14. How many codes have all the same number?

2222, 7777, etc.

Total Codes:

$$10 \cdot 10 \cdot 10 \cdot 10 \cdot 10 = 100,000$$

$$\frac{\text{fav. outcomes}}{\text{total outcomes}} = \frac{10}{100,000} = \frac{1}{10,000}$$

$$16. \text{Area of Square} = 10 \cdot 10 = 100 \text{ cm}^2$$

$$\text{Area of Circle} = \pi r^2 = \pi (5)^2 = 78.54 \text{ cm}^2$$

$$\text{Shaded Region} = \text{Square} - \text{Circle}$$

$$= 100 - 78.54$$

$$= 21.46$$

$$\frac{\text{fav. outcomes}}{\text{total outcomes}} = \frac{21.46}{100} = \boxed{21.5\%}$$

$$18. \text{Total} = 10 + 14 + 12 + 14 = 50 \text{ (From Chart)}$$

$$\text{At least 1 tails} = \frac{40}{50} = \frac{4}{5}$$

$$20. \frac{26}{50} = \frac{13}{25}$$

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22. (4 possibilities when tossing 2 coins)  
 $\frac{3}{4}$

24.  $\frac{2}{4} = \frac{1}{2}$

26. Can't select more than one pen at a time.

$$\frac{10}{25} \cdot \frac{15}{25} = \frac{150}{625} = \frac{6}{25}$$

28. (Limited to only married ppl)

$$\frac{4}{52} = \frac{1}{13}$$

30. (Out of everybody)

$$\frac{14}{99}$$

32.  $\frac{1}{3} + \frac{1}{2}$  Have to get common denominators!

$$\frac{2}{6} + \frac{3}{6} = \boxed{\frac{5}{6}}$$

34.  $\frac{13}{52} + \frac{13}{52} = \frac{26}{52} = \boxed{\frac{1}{2}}$