

## SM2-A HW #11-7 (Sequential Events)

**Find the probability.**

- 1) There are five boys and five girls in a class. The teacher randomly selects one student to answer a question. Later, the teacher randomly selects a different student to answer another question. The first student is a boy and the second student is a girl.
- A)  $\frac{5}{18} \approx 0.278$       B)  $\frac{25}{169} \approx 0.148$   
 C)  $\frac{1}{64} \approx 0.016$       D)  $\frac{15}{121} \approx 0.124$
- 2) You flip a coin and then roll a fair six-sided die. The coin lands heads-up and the die shows a six.
- A)  $\frac{14}{33} \approx 0.424$       B)  $\frac{40}{169} \approx 0.237$   
 C)  $\frac{1}{12} \approx 0.083$       D)  $\frac{1}{4} = 0.25$
- 3) You flip a coin twice. The first flip lands tails-up and the second flip lands heads-up.
- A)  $\frac{5}{18} \approx 0.278$       B)  $\frac{24}{91} \approx 0.264$   
 C)  $\frac{1}{4} = 0.25$       D)  $\frac{1}{17} \approx 0.059$
- 4) A basket contains four apples and six peaches. You randomly select a piece of fruit and then return it to the basket. Then you randomly select another piece of fruit. Both pieces of fruit are apples.
- A)  $\frac{4}{25} = 0.16$       B)  $\frac{3}{11} \approx 0.273$   
 C)  $\frac{10}{39} \approx 0.256$       D)  $\frac{1}{4} = 0.25$
- 5) A spinner has an equal chance of landing on each of its six numbered regions. You spin twice. The first spin lands in region one and the second spin lands in region two.
- A)  $\frac{10}{39} \approx 0.256$       B)  $\frac{1}{12} \approx 0.083$   
 C)  $\frac{1}{36} \approx 0.028$       D)  $\frac{12}{49} \approx 0.245$
- 6) You select a card from a standard shuffled deck of 52 cards. You return the card, shuffle, and then select another card. Both times the card is a diamond. (Note that 13 of the 52 cards are diamonds.)
- A)  $\frac{4}{25} = 0.16$       B)  $\frac{1}{4} = 0.25$   
 C)  $\frac{1}{16} \approx 0.063$       D)  $\frac{49}{225} \approx 0.218$
- 7) There are fourteen shirts in your closet, eight blue and six green. You randomly select one to wear on Monday and then a different one on Tuesday. You wear blue shirts both days.
- A)  $\frac{35}{132} \approx 0.265$       B)  $\frac{4}{13} \approx 0.308$   
 C)  $\frac{16}{169} \approx 0.095$       D)  $\frac{3}{11} \approx 0.273$
- 8) A basket contains seven apples and eight peaches. You randomly select a piece of fruit and then return it to the basket. Then you randomly select another piece of fruit. Both pieces of fruit are apples.
- A)  $\frac{10}{39} \approx 0.256$       B)  $\frac{1}{4} = 0.25$   
 C)  $\frac{49}{225} \approx 0.218$       D)  $\frac{25}{196} \approx 0.128$

9) Your sock drawer has four white socks, four brown socks, and two black socks. You randomly pick two socks and get a matching pair of black socks.

- A)  $\frac{1}{12} \approx 0.083$       B)  $\frac{4}{25} = 0.16$   
 C)  $\frac{9}{100} = 0.09$       D)  $\frac{1}{45} \approx 0.022$

11)  $P(\text{Ford and Black}) = ?$

Use the following 2-Way table:

	Black	White	total
Ford	10	15	25
Honda	7	8	15
totals	17	23	40

- A)  $\frac{10}{17}$       B)  $\frac{10}{40}$   
 C)  $\frac{25}{40}$       D)  $\frac{10}{25}$

13)  $P(F \text{ "given it is" } B) = ?$

Use the following 2-Way table:

	Black	White	total
Ford	10	15	25
Honda	7	8	15
totals	17	23	40

- A)  $\frac{10}{40}$       B)  $\frac{8}{40}$   
 C)  $\frac{10}{17}$       D)  $\frac{10}{25}$

15)  $P(H \text{ OR } W) = ?$

Use the following 2-Way table:

	Black	White	total
Ford	10	15	25
Honda	7	8	15
totals	17	23	40

- A)  $\frac{8}{15}$       B)  $\frac{8}{23}$   
 C)  $\frac{10}{40}$       D)  $\frac{8}{40}$

10) You select two cards from a standard shuffled deck of 52 cards. Both selected cards are diamonds. (Note that 13 of the 52 cards are diamonds.)

- A)  $\frac{1}{3} \approx 0.333$       B)  $\frac{1}{4} = 0.25$   
 C)  $\frac{2}{45} \approx 0.044$       D)  $\frac{1}{17} \approx 0.059$

12)  $P(F \text{ OR } B) = ?$

Use the following 2-Way table:

	Black	White	total
Ford	10	15	25
Honda	7	8	15
totals	17	23	40

- A)  $\frac{32}{40}$       B)  $\frac{10}{17}$   
 C)  $\frac{10}{40}$       D)  $\frac{10}{25}$

14)  $P(\text{Honda and White}) = ?$

Use the following 2-Way table:

	Black	White	total
Ford	10	15	25
Honda	7	8	15
totals	17	23	40

- A)  $\frac{8}{23}$       B)  $\frac{8}{15}$   
 C)  $\frac{8}{40}$       D)  $\frac{15}{40}$

16)  $P(W \text{ "given that it is" } H) = ?$

Use the following 2-Way table:

	Black	White	total
Ford	10	15	25
Honda	7	8	15
totals	17	23	40

- A)  $\frac{8}{23}$       B)  $\frac{8}{15}$   
 C)  $\frac{8}{40}$       D)  $\frac{8}{17}$

17)  $P(B \text{ "given that it is" } H) = ?$

Use the following 2-Way table:

	Black	White	total
Ford	10	15	25
Honda	7	8	15
totals	17	23	40

- A)  $\frac{10}{40}$       B)  $\frac{7}{17}$   
 C)  $\frac{7}{15}$       D)  $\frac{7}{40}$

18)  $P(B \text{ OR } H) = ?$

Use the following 2-Way table:

	Black	White	total
Ford	10	15	25
Honda	7	8	15
totals	17	23	40

- A)  $\frac{15}{40}$       B)  $\frac{7}{17}$   
 C)  $\frac{7}{15}$       D)  $\frac{7}{40}$

**Perform the indicated operation.**

19)  $g(x) = 3x + 2$   
 $f(x) = x^3 - 4x^2$   
 Find  $(g - f)(x)$

- A)  $x^2 - x + 5$   
 B)  $x^3 - 4x^2 - 3x - 2$   
 C)  $-x^3 - 4x^2 + 3x - 2$   
 D)  $-x^3 + 4x^2 + 3x + 2$

20)  $g(n) = n^3 + 1$   
 $h(n) = n - 3$   
 Find  $(3g + 5h)(n)$

- A)  $3n^3 + 5n - 12$   
 B)  $10n^2 + 12n - 29$   
 C)  $-5n^3 - 3n - 4$   
 D)  $5n^3 + 3n - 4$

21)  $f(n) = 3n - 4$   
 $g(n) = n^3 + 2n^2$   
 Find  $(f \cdot g)(n)$

- A)  $2n^3 - 10n^2 - 4n + 20$   
 B)  $3n^4 + 2n^3 - 8n^2$   
 C)  $4n^2 - 15n - 4$   
 D)  $3n^3 - 2n^2 - 8n$

22)  $f(x) = x^3 - x^2 + 2x$   
 $g(x) = -x + 4$   
 Find  $(f - g)(x)$

- A)  $-x^3 + x^2 - 3x + 4$   
 B)  $x^3 + x^2 + 3x + 4$   
 C)  $x^3 - 2x$   
 D)  $x^3 - x^2 + 3x - 4$

23)  $g(x) = x^2 + 5x$   
 $h(x) = 3x$   
 Find  $(g + h)(-8)$

- A) 0      B) 105  
 C) 128      D) -15

24)  $g(x) = -x + 5$   
 $h(x) = 3x + 3$   
 Find  $(g \circ h)(9)$

- A) 45      B) -9  
 C) -25      D) 102