

East Los Angeles College  
Department of Mathematics  
Math 227  
Test 2

*How much sleep did you get last night?*

The following data was collected in hours.

**2, 0, 4, 6, 6, 8, 7, 4, 6, 6, 8, 4, 0, 8, 3, 5, 0, 4**

Determine the following.

- |          |             |
|----------|-------------|
| 1. $Q_1$ | 2. $Q_2$    |
| 3. $Q_3$ | 4. $D_1$    |
| 5. $D_9$ | 6. $P_{65}$ |

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**Standard Deck**

Assume the Ace is low. If you select a card at random, what's the probability of selecting the following: **Approximate your answer to the nearest thousandths**

- |   |   |
|---|---|
| 7. King?                                    | 8. Heart?                                       |
| 9. <b>Non</b> King?                         | 10. Black Card?                                 |
| 11. Black King?                             | 12. Face card?                                  |
| 13. King of Hearts?                         | 14. King <b>or</b> Heart?                       |
| 15. 5 <b>or</b> a 7?                        | 16. 7 <b>given that</b> the card is a Diamond?  |
| 17. 10 <b>given that</b> the card is Black? | 18. Black <b>given that</b> the card is an Ace? |
19. If you select two **different** cards, what is the probability they are both Hearts?
20. If you select three cards **with replacement**, what is the probability they are all Aces?

### Drinking based on Age Groups

The following table illustrates the drinking habits based on age groups. If you select a person at random, what's the probability of selecting a person: **Approximate your answer to the nearest thousandths**

|              | Age<br>21 to 31 | Age<br>32 to 42 | Age<br>43 to 53 | Age<br>54 to 64 | <b>Total</b> |
|--------------|-----------------|-----------------|-----------------|-----------------|--------------|
| Drink        | 78              | 99              | 43              | 50              | <b>270</b>   |
| Not Drink    | 42              | 58              | 19              | 38              | <b>157</b>   |
| <b>Total</b> | <b>120</b>      | <b>157</b>      | <b>62</b>       | <b>88</b>       | <b>427</b>   |

21. Drinks?
22. Is aged 32 to 42?
23. Does **not** drink?
24. Is **not** aged 21 to 31?
25. Drinks **and** is aged 32 to 42?
26. Drinks **or** is aged 32 to 42?
27. Drinks **given that** the person is aged 21 to 31?
28. Drinks **given that** the person is aged 43 to 53?
29. If you select two **different** people at random, what is the probability they both drink?
30. If you select three **different** people at random, what is the probability none drink?

### Answer Sheet

|    |  |    |  |
|----|--|----|--|
| 1  |  | 16 |  |
| 2  |  | 17 |  |
| 3  |  | 18 |  |
| 4  |  | 19 |  |
| 5  |  | 20 |  |
| 6  |  | 21 |  |
| 7  |  | 22 |  |
| 8  |  | 23 |  |
| 9  |  | 24 |  |
| 10 |  | 25 |  |
| 11 |  | 26 |  |
| 12 |  | 27 |  |
| 13 |  | 28 |  |
| 14 |  | 29 |  |
| 15 |  | 30 |  |