

## Math 112 - Quiz 12

May 9, 2018

Name key

Score \_\_\_\_\_

Show all work to receive full credit. Supply explanations when necessary.

1. (10 points) A teacher collected the following data on her students.

	Completed assignments	Did not complete assignments	
Passed class	217	59	276
Failed class	18	67	85
	235	126	361

One of those students is selected at random.

- (a) What is the probability that the student completed assignments?

$$\frac{217+18}{361} = \frac{235}{361} \approx 65\%$$

- (b) What is the probability that the student passed the class?

$$\frac{217+59}{361} = \frac{276}{361} \approx 76\%$$

- (c) What is the probability that the student completed assignments or passed the class?

$$\frac{217+18+59}{361} = \frac{294}{361} \approx 81\%$$

- (d) What is the probability that the student completed assignments and passed the class?

$$\frac{217}{361} \approx 60\%$$

- (e) Explain why the answer in part (c) is not the sum of the answers in parts (a) and (b).

Adding (a) and (b) counts the overlap (217) twice. The 217 should not be counted twice.