

Exploring the World of Math

Name: _____ Date: _____

Weighted Averages

1. Brian is taking a ten-week Statistics Math class and has the following scores in homework, quizzes, and tests. In this class, the instructor weighted the homework at 20%, quizzes at 30% and tests at 50%. What is Brian's final percent in the class

Category	1	2	3	4	5	6	7	8	9	10
Homework	100	95	97	98	78	85	0	82	77	82
Quizzes	98	75	82	73	92	86	62	92	85	84
Tests	90	82	85	81	88	91	71	87	88	91

	Avg	Weight	Score
Homework		20%	
Quizzes		30%	
Tests		50%	
		Grade	

2. Shirley is planning her first vacation in 10 years, so she is taking her time to judge each site. She has studied each area and scored it with a rating of 1 to 5. She has weighted each category for what is important to her. Scenery is 25%, shopping is 40%, food is 20% and entertainment is 15%. According to her assessment, where should she go on vacation?

Category	Las Vegas	Chicago	NY	Disney World	Hilton Head	Grand Canyon	Paris	DC	London	Rome
Scenery	3	4	3	3	5	5	5	4	4	4
Shopping	4	5	4	4	3	1	5	3	5	4
Food	5	4	5	4	3	2	5	4	3	5
Entertainment	5	3	5	4	3	2	3	3	3	3
Weighted Score	4.1									

Las Vegas Example: $3 \times 0.25 + 4 \times 0.40 + 5 \times 0.2 + 5 \times 0.15 = 0.75 + 1.6 + 1 + 0.75 = 4.1$

Exploring the World of Math

3. Stan is performing a risk assessment for this month's work. He has studied each area and scored it with a rating of 1 to 5. He has weighted each category for what is important to him. Planning is 10%, training of the workers is 30%, weather in the environment is 20%, time to complete is 15%, and onsite supervision is 25%. According to his assessment, what is the most dangerous part of this month's work?

Category	Demolition	Debris Removal	Structural	Concrete Floor	Electrical	Finishing
Planned	3	2	4	3	2	3
Trained	4	4	5	3	3	3
Environment	3	4	4	4	4	4
Time to complete	2	3	3	4	3	2
Supervision	5	3	4	5	2	3
Weighted Score						

4. Vicky is trying to determine where to live in the Columbus metropolitan area. She writes each area down and rates them on a scale from 1 to 10. The areas are Bexley, Clintonville, Dublin, Gahanna, Hilliard, Powell, Reynoldsburg, Westerville, Whitehall, and Worthington. Safety is weighted 30%, schools system is 20%, taxes are 10%, roads are 20%, and neighbors are 20%. What area of the city is ranked the best?

Category	Bexley	Clintonville	Dublin	Gahanna	Hilliard	Powell	Reynoldsburg	Westerville	Whitehall	Worthington
Safe	4	3	4	4	4	5	4	4	3	3
Schools	3	2	4	5	3	5	3	3	2	3
Tax	4	5	2	3	3	4	3	3	4	3
Roads	3	2	4	4	4	5	3	3	3	3
People	2	4	3	3	3	3	3	4	3	3
Weighted Score										

5. What is the mean and standard deviation of the following data?

75 81 98 66 81 86 84 77 71 83