

**19. Galaxy Distances** The cluster Hydra has a measured redshift of 0.0126. Find the best predicted distance to that cluster. Is the result close to the actual distance of 0.18 billion light-years?

Redshift	0.0233	0.0539	0.0718	0.0395	0.0438	0.0103
Distance	0.32	0.75	1.00	0.55	0.61	0.14

**20. Diamond Prices** Not included in the table below is a diamond with a weight of 1.50 carats. Find the best predicted price for this diamond. Is the result close to the actual price of \$16,097? What is wrong with predicting the price of a 1.50-carat diamond?

Weight	0.3	0.4	0.5	0.5	1.0	0.7
Price	510	1151	1343	1410	5669	2277

**21. Measuring Seals from Photos** Find the best predicted weight of a seal if the overhead width measured from a photograph is 2 cm. Can the prediction be correct? What is wrong with predicting the weight in this case?

Overhead Width	7.2	7.4	9.8	9.4	8.8	8.4
Weight	116	154	245	202	200	191

**22. Car Repair Costs** Find the best predicted repair costs for a full-rear crash for a Volkswagen Passat, given that its repair cost from a full-front crash is \$4594. How does the result compare to the \$982 actual repair cost from a full-rear crash?

Front	936	978	2252	1032	3911	4312	3469
Rear	1480	1202	802	3191	1122	739	2767

**23. Blood Pressure Measurements** Find the best predicted systolic blood pressure in the left arm given that the systolic blood pressure in the right arm is 100 mm Hg.

Right Arm	102	101	94	79	79
Left Arm	175	169	182	146	144

**24. Crickets and Temperature** Find the best predicted temperature at a time when a cricket chirps 3000 times in 1 minute. What is wrong with this predicted value?

Chirps in 1 min	882	1188	1104	864	1200	1032	960	900
Temperature (°F)	69.7	93.3	84.3	76.3	88.6	82.6	71.6	79.6

**25. Gas Prices** One gas station not included in the table below had a listed price of \$2.78 for regular gas. Find the best predicted price of premium gas at this station. Is the result close to the actual price of \$2.93 for premium gas?

Regular	2.77	2.77	2.79	2.81	2.78	2.86	2.75	2.77
Mid-Grade	3.00	2.77	2.89	2.93	2.93	2.96	2.86	2.91
Premium	3.07	3.09	3.00	3.06	3.03	3.06	3.02	3.03