1. For the first 10 miles of a trip, Pete’s gas mileage on his Harley Mini was 10 mpg. For the next 10 mi. it registered 100 mpg.

What was the Mini’s average gas mileage for the entire trip?

1. For the first 10 miles of a trip, Pete’s average speed was 20 mph

For the next 10 miles it was 100 mph.

What was the Mini’s average speed for the entire trip?

1. Sarah Jane bought cartridges for the various printers in her office and spent $200 for each type. She paid $10 for each of the cartridges for the black & white printers, $20 for each of the cartridges for the color printers and $25 for each of the cartridges for her supervisor’s printer. What was the average cost of a single cartridge?
2. Last season Cody got 60 hits for a Fenway batting average of .400. For his AWAY games he also got 60 hits, but his batting average was only .300. What was Cody’s batting average for the entire season?
3. Jack’s company will award an end-of-the-year bonus to any employee whose total yearly sales represent at least 10% of the company’s sales. During the last fiscal year, Jack’s sales were a consistent $50,000 for each quarter. However his quarter 1 sales represented 10% of the company’s sales. For quarter 2, his sales represented 6% of the company’s sales. For quarters 3 & 4 they represented 8% and 30% respectively. Did Jack earn his bonus? Defend your answer.
4. In a recent county election poll, voters in each of the 5 districts were asked whom they support. For each of the 5 counties, 473 voters expressed their support for Mr. James W. Beam: These results represented 19% of voters in District A, and 25%, 18%, 57% and 31% in the other 4 districts.

Mr. Beam claims to have the support of 30% of the county. Is he correct? If no, then by how much is he off?

1. Ollie Charles Dickens (known to his friends as OCD) will have a great day if he can average exactly 60 mph on his way to work. The 1st 6.3 miles are along back roads, while the final 6.3 miles is traveled on “straight as an arrow” freeway. School buses, wet leaves and a touch of ice slowed the back road portion to only 30 mph. How fast must Mr. OCD travel on the freeway, so that he can have a great day?
2. Each day Violet sells 72 each of 9 fruits: Apples – Oranges – Pears – Plums – Kiwi – Nectarine – Pomegranate – Peaches & Tangellos and respectively they represent 3/4 , 2/3, 1/2, 3/5, 3/7, 8/9, 6/13, 9/11 and 1/2 of the amount of each fruit that she bought. At the end of the day she donates any unsold fruit to a food pantry. What percent of her daily fruit purchase goes to the food pantry?
3. The EPA has mandated that, by 2015, the total % of all models of all vehicles produced by any manufacturer must get at least 35 mpg. Four of the 5 models of the Great Wall Auto Corp have tested to get 30 mpg, 38 mpg, 42 mpg and 25 mpg. If they all use the same test track, what must the fuel mileage of the 5th model be in order for GWAC to be allowed to manufacture automobiles in the US?
4. Periodically the water in Sparkletown is tested for impurities. Recently 7 samples were tested: Four 25 gallon samples from spots near each of the four corners and three 50 gallon samples from varying spots in the middle of the reservoir. The corner samples registered 84%, 87%, 89% and 85% pure, while the center samples had readings of 96%, 99% and 93% pure. On the state report, Sparkletown Public Health reported that “the purity rate of the 250 gallons sampled was \_\_\_\_\_\_\_\_ percent.
5. Periodically the water in Sparkletown is tested for impurities. Recently 7 samples were tested: Each of 4 samples from spots near each of the four corners revealed 25 gallons of pure water and each of 3 samples from varying spots in the middle of the reservoir yielded 50 gallons of pure water. The corner samples registered 84%, 87%, 89% and 85% pure, while the center samples had readings of 96%, 99% and 93% pure. On the state report, Sparkletown Public Health reported that “the purity rate of the 250 gallons sampled was \_\_\_\_\_\_\_\_ percent.
6. Two telephone poles are 30 feet and 50 feet tall, and they are positioned so that they are 80 feet apart. When guide wires from the tops of each extend to the bases of the others, they intersect at a specific point “E”. How high is “E” above the ground?
7. Two telephone poles are “a” feet and “b” feet tall, and they are positioned so that they are “F” feet apart. When guide wires from the tops of each extend to the bases of the others, they intersect at a specific point “E”. How high is “E” above the ground?
8. If Thelma can paint a house, by herself, in 8 hours, and Louise can paint the same house in only 5 hours, then how long will it take for them to paint the house if they work together?
9. Harry can mow a lawn all by himself in H minutes, while David can mow the same lawn in D minutes. If they both work together, then how long will it take for them to mow the same lawn?

***Answers***

1. The mini’s average for the entire trip is **18 2/11** mpg
2. The mini-van’s average fuel mileage for the entire trip is **33 1/3** mph
3. The average cost of a printer cartridge is **$15.79**
4. Cody’s combined batting average is **.343**
5. No. His sales were only **9.41%** of the company sales.
6. No. He came up **4.75%** short
7. Mr. OCD is going to have a bad day as it will be impossible for him to average 60 mph for the entire trip.
8. Violet donates **41.36%** of her total fruit purchases to the food pantry.
9. The 5th vehicle must get **51.56** mpg if the fleet is to be marketable.
10. The total water sample is **91.2%** pure
11. The total water sample is **91.79%** pure
12. Point E will be **18.75** feet above the ground
13. Point E will be **ab/(a+b)** feet above the ground
14. Thelma and Louise can do the job in **3 1/13** hours
15. Harry and David can mow the lawn in **HD/(D+H)** minutes

