1. $\boxed{x - \$30,000}$

2. $\boxed{\$47.20}$

3. $\boxed{31}$

4. Let h = cost of hamburger, s = cost of soda. So George's order can be expressed as $2h+3s = \$4.13$. Let c = cost of cheeseburger. Then David's order can be expressed as $4c+6s$. We are told that cheeseburgers cost \$0.15 more than hamburgers, or $c = h + 0.15$. Replace this in our David equation: $4c+6s = 4(h+0.15)+6s = 4h+0.60+6s$. Now express David's order in terms of George's order, or write $2(2h+3s)+0.60 = 2(4.13)+0.60 = 8.26+0.60 = \boxed{\$8.86}$

5. $\boxed{10 \text{ s}}$

6. $\boxed{6}$

7. $\boxed{9}$

8. $\boxed{42 \text{ mph}}$

9. We need to find some values of a, b, c and d, not necessarily distinct, such that $a^2+b^2+c^2+d^2 = 23$. Guessing and checking tells us that $a = 1$, $b = 2$, and $c = d = 3$. In otherwords, $1 + 4 + 9 + 9 = 23$. So the area of our largest square is 9, so the side length is 3, so the perimeter is 12. The area of the smallest square is 1, so the side length is 1, so the perimeter is 4. So the difference in perimeters is $12 - 4 = \boxed{8}$

10. Let p be the percent that Sean must get right on his final exam in order to get an 88% in the class. Then we can set up an equation: $88\% = (20\%)p + (80\%) \times 86\%$. We multiply by 20% and 80% because we must scale his score to the proportion of the grade. So now we can solve for p: $.88 = .20p + .688 \Rightarrow .2p = .192 \Rightarrow p = .96$. So he must get a 96% on the exam. 96% of 55 points is $.96 \times 55 = 52.8$, but there is no partial credit. So in order to get at LEAST an 88%, he must score at LEAST 52.8 points, so we round up to $\boxed{53}$ points.