

Solutions to Sample Questions for Exam 1 Sp 2009

1. C
2. 6.92×10^{-6}
3. mean = 412.138, median = 278.65, range 11.2 to 1103.6
4. $-9/2$ or -4.5
5. (a) $\frac{3}{7a-24}$ (b) all real numbers except $-4/7$
6. (a) about 26.93% (b) $y = 11,896.67x + 132,500$ (c) about \$191,983.33
7. B and C
8. (a) Midpoint = (5, -1.5) (b) Distance = $\sqrt{(3-7)^2 + (-5-2)^2} = \sqrt{65} \approx 8.06$
9. slope = 3, y-intercept = 4; equation is $y = 3x + 4$
10. Here we have point (0, 8.3) and slope -0.32; equation is $y = -0.32x + 8.3$
- 11.

x	y	xy	x ²
-4	1.2	-4.8	16
-2	2.8	-5.6	4
0	5.3	0	0
2	6.7	13.4	4
4	9.1	36.4	16
0	25.1	39.4	40 ← sums

Slope = 0.985

Y-intercept = 5.02

12. Nonlinear; slope between (-2, 50) and (0, 40) is -5 while the slope between (0, 40) and (2, 34) is -3.
13. (a) 140 miles. (b) 70 miles.
14. Compute the slope of the line between (2, f(2)) and (4, f(4)); these points are (2, 20) and (4, 64). The change of y divided by the change of x is 22. So the average rate of change is 22 units.
15. If you extend the line to where 9 would be along the x-axis it would have a negative value. This is impossible for a winning time in a race.
16. domain = all real numbers, range is all real numbers less than or equal to 2 or $[2, -\infty)$.

TRUE/FALSE

1. TRUE
2. FALSE
3. TRUE
4. TRUE
5. TRUE
6. FALSE
7. FALSE
8. FALSE
9. TRUE
10. FALSE