

Algebra 2: 1st Semester Review Key (Ch. 2-6)

1. $\frac{11}{2}$

2. $y = -x - 8$

3. $y = -8 + \frac{2}{5}(x + 1)$ or $y = -6 + \frac{2}{5}(x - 4)$

4. $\frac{1}{49}$

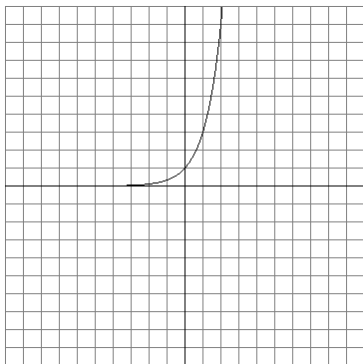
5. $\frac{1}{27}$

6. 5

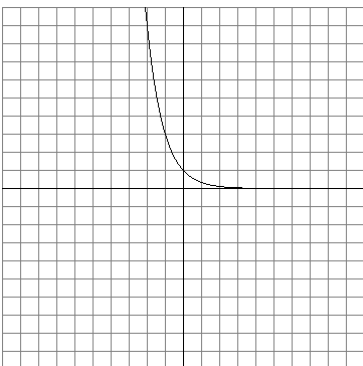
7. $\frac{1}{9}$

8. 10,000,000

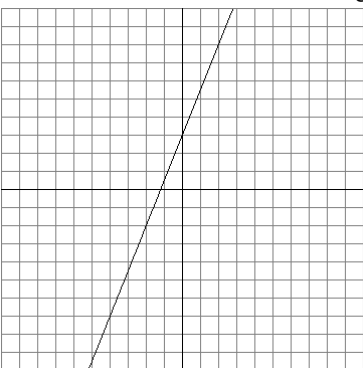
9a. Domain: All Real Numbers Range: $y > 0$



9b. Domain: All Real Numbers Range: $y > 0$



10. Domain: All Real Numbers Range: All Real Numbers



11. 3

12. -5

13. $\log_3 81 = 4$

14. $125^{2/3} = 25$

15. a) (-3, -1)

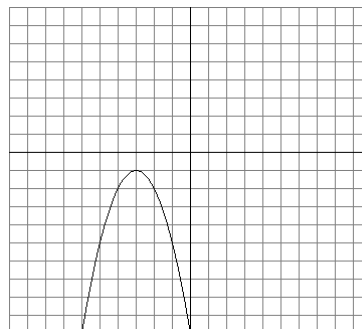
b) $x = -3$

c) Down

d) Maximum

e) Maximum Value = -1

f)



g) Domain: All real numbers Range: $y \leq -1$

16. x - intercepts: $x = -7$ and $x = 1$; Vertex (-3, -48)

17. $y = (x + 2)^2 - 3$

18. $y = 3(x - 1)^2 - 2$

19. $x = \frac{5}{3}$ or $x = -4$

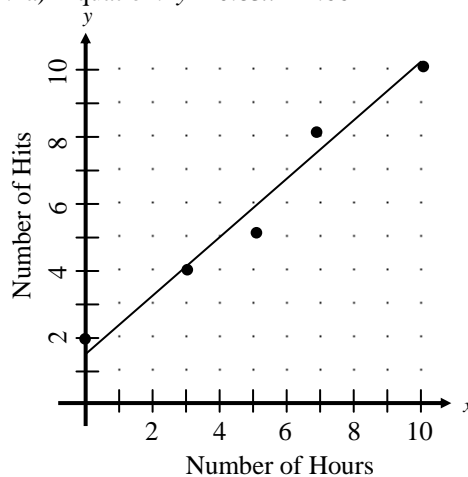
20. missing problem

21. A

22. Yes

23. Domain: $x \geq 3$; Range: $y \geq 29$

24. a) Equation: $y = 0.83x + 1.66$



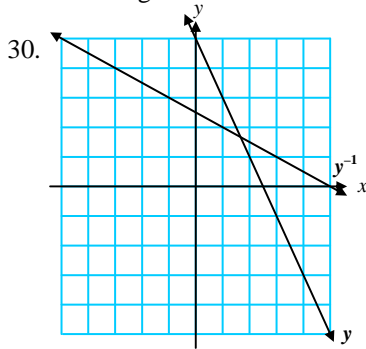
b) approximately 18

c) .987

25. negative

26. $y = 30(0.9)^x$; 6.58 hours for half to be eliminated

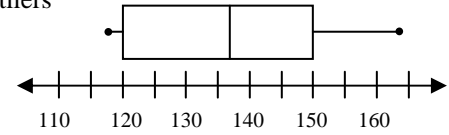
27. a) 17.67 years
 b) \$54,742.76
 28. \$4,957.87
 29. a) Equation: $y = 75,098.95(1.07)^x$
 b) Using regression eq. w/o rounding: \$194,084.29
 Using rounded answer from part a): \$207,200.37



31. $\log_a 4 + \log_a x + 2\log_a y - 5\log_a z$
 32. $6\log_a m + \log_a n + 3\log_a h$
 33. $\log_b (x^7 y^5)$
 34. $\log_p 4$
 35. about 3.02
 36. $x = \frac{2}{5}$
 37. $x \approx 0.64$
 38. $x = \pm 2\sqrt{3} \approx \pm 3.46$
 39. $x = \pm 7$
 40. $y = -\frac{1}{2}(x-3)^2 + 4$
 41. $y = -\frac{3}{2}(x-1)(x-5)$ or $y = -\frac{3}{2}(x-3)^2 + 6$
 42. 30 feet
 43. Maximum Value = 13
 44. $y = (2x-5)(5x+4)$
 45. $x = -5$ or $x = 1$
 46. $x = 9$ or $x = 4$
 47. one solution

48. a) 136.9
 b) 137.03
 c) 118.4
 d) 164.3
 e) 120.6
 f) 150
 g) 45.9
 h) 29.4
 i) No Outliers

Boxplot:



49.

Interval	Frequency	Relative Frequency
30-39	1	7 %
40-49	1	7 %
50-59	2	14 %
60-69	3	21 %
70-79	5	36 %
80-89	2	14 %

