

① $7, 11, 15, 19, 23$

② $s_n = \frac{n(a_1 + a_n)}{2}$

$657 = 9 + (n-1)9$

$657 = 9 + 9n - 9$

$657 = 9n$

$n = 73$

$S_{73} = \frac{73(9 + 657)}{2}$

$= 24,309$

③ $S_{\infty} = \frac{a_1}{1-r} = \frac{\frac{5}{2}}{1-\frac{1}{2}} = \frac{\frac{5}{2} \cdot \frac{2}{1}}{\frac{2}{1} \cdot \frac{1}{2}} = \frac{5}{1} = 5$

$a_0 = \frac{5}{2} = \frac{5}{2}$

$a_1 = \frac{5}{2^2} = \frac{5}{4}$

$r = \frac{1}{2}$

④ $y = mx + b$

⑤ $\frac{-1-5}{3-2} = \frac{-6}{1} = -6$

⑥ $3x - 5y = 15$

$3(0) - 5y = 15$

$-5y = 15$

$y = -3$

⑦ $y = -4$

⑧

$\frac{12-3}{4-0} = \frac{9}{4}$

$3 = \frac{9}{4}(0) + b$

$3 = b$

$y = \frac{9}{4}x + 3$

⑩

$x^2 - 1 \neq 0$

$(x+1)(x-1)$

$x = \pm 1$

⑪

$x = \frac{5}{3}$

⑫ on calc

$x = 1.44$

$x = -1.65$

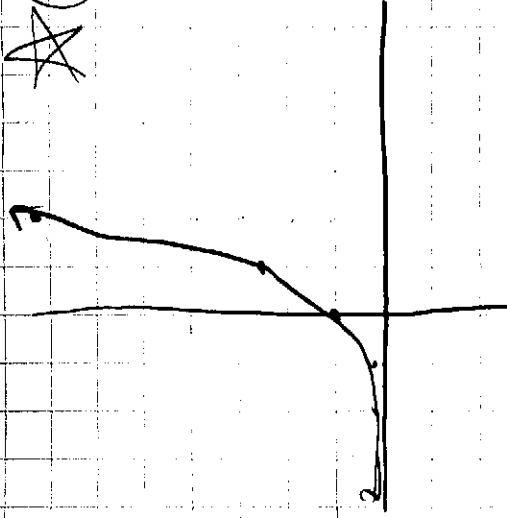
$x = -.31$

$\text{sum} \approx .62$

$x = 1.96$

14. $y = e^x$

x	y
-2	.14
-1	.37
0	1
1	2.72
2	7.39



16. $\log_x 16 = 2$

$x^2 = 16$

17. $3 + \log_{16} 2$

$3 + \frac{1}{4} = 3\frac{1}{4}$

$16^x = 2$

18. $4^{-x} - 8 =$

$\log_4 8 = -x$

19. $10^x = \frac{1}{1000}$

$x = -3$

20. $\log_4 (x+2) + \log_4 (x-4) = 2$

$\log_4 (x^2 - 2x - 8) = 2$

$4^2 = x^2 - 2x - 8$

$16 = x^2 - 2x - 8$

$0 = x^2 - 2x - 24$

$0 = (x-6)(x+4)$

$x = 6$

21. $4^{-x} = 8$

$x + 3 > 0$

$x > -3$

$(22)^x = 2^3$

$-2x = 3$

$x = -\frac{3}{2}$

23. $\frac{13}{x} = \frac{11}{57} = \frac{11}{19} = \frac{260}{260}$

$57 \cdot \frac{11}{19} = \frac{260}{260}$

25. $1000 = 500e^{.06t}$

$2 = e^{.06t}$

$\ln 2 = \ln e^{.06t}$

$\frac{\ln 2}{.06} = \frac{.06t}{.06} \quad t = 11.55 \text{ yrs}$

24. $1000 = 8(2)^5$

$\frac{1000}{8} = 32p$

$31.25 = p$

26. $y = 400e^{-.05 \cdot 7}$

$= 567.63$

(27)

$$y = 1.5(1 + 0.58)^7$$

$$= 2.23 \text{ million}$$

(29)

$$\frac{8000}{5000} = \frac{5000(1.08)^t}{5000}$$

$$1.6 = 1.08^t$$

$$\log 1.6 = \log 1.08^t$$

$$\frac{\log 1.6}{\log 1.08} = \frac{t \log 1.08}{\log 1.08}$$

$$t = 6.11$$

$$\approx 7 \text{ yrs}$$

(28)

$$15000 = P \left(1 + \frac{0.45}{12} \right)^{12 \cdot 5}$$

$$15000 = P(1.00375)^{60}$$

$$15000 = 1.25P$$

$$P = 11982.78$$

(30)

$$21 \quad 20 \quad 20 = 8400$$

(31)

$$8C_3 = 56$$

(32)

$$n(H \cap S) = n(H) + n(S) - n(H \cup S)$$

$$= 3540 + 1850 - 5200$$

$$= 190$$

Change total to

6000