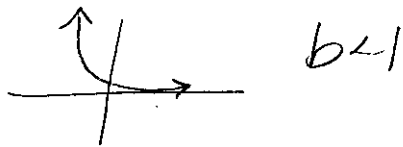


PART I: YOU MUST SHOW ALL WORK FOR FULL CREDIT!!!

<p>1.) $3b^{2/d}$ $\frac{\text{power}}{\text{root}}$ $3\sqrt[d]{b^2}$</p> <p style="text-align: right;">4</p>	<p>2.) $\frac{\text{score}}{\text{\# of tests}} = \frac{85(3) + 93t}{t + 3}$</p> <p style="text-align: right;">3</p>
<p>3.) $(2-yi)(2-yi)$ $4 - 4yi + y^2 i^2$ $4 - 4yi + y^2(-1)$</p> <p style="text-align: right;">2</p>	<p>4.) #2 - 4 zeros #4 - 4 zeros</p> <p style="text-align: right;">3</p>
<p>5.) $\sqrt{56-x} = x$ check $x^2 + x - 56 = 0$ $(x+8)(x-7) = 0$ $-8 \quad 7$</p> <p style="text-align: right;">3</p>	<p>6.) $(x^4 - 4x^3)(9x^2 + 36x)$ 0, 3, -3 $x^3(x-4) - 9x(x-4)$ 4 $(x^3 - 9x)(x-4) = 0$ $x(x+3)(x-3)(x-4) = 0$</p> <p style="text-align: right;">3</p>
<p>7.) graphed center around .5 therefore Anne's coin is unusual</p> <p style="text-align: right;">3</p>	<p>8.) $\frac{c+1}{1-c} = \frac{c+1}{(1+c)(1-c)} = \frac{1}{1-c}$</p> <p style="text-align: right;">4</p>
<p>9.) normalcdf .4772499375</p> <p style="text-align: right;">2</p>	<p>10.) .8 \rightarrow (1-.2)</p> <p style="text-align: right;">4</p>
<p>11.) $P(R S) = \frac{P(R \cap S)}{P(S)}$</p> <p style="text-align: right;">1</p>	<p>12.) $2x^2 + 3x + 2 = 0$ $\frac{-3 \pm \sqrt{3^2 - 4(2)(2)}}{2(2)} = \frac{-3 \pm i\sqrt{7}}{4}$ $\frac{-3 \pm \sqrt{-7}}{4}$</p> <p style="text-align: right;">1</p>
<p>13.) $20 - 10 = 10$ mid-amp</p> <p style="text-align: right;">3</p>	<p>14.) $\frac{2x^2 - 3x - 11}{2x+3} = \frac{-11}{2x+3}$ $2x+3 \overline{) 4x^3 + 0x^2 + 5x + 10}$ $\underline{-4x^3 + 6x^2}$ $\quad \quad \quad \underline{+6x^2 + 9x}$ $\quad \quad \quad \quad \underline{19x + 10}$ $\quad \quad \quad \quad \quad \underline{-11}$</p> <p style="text-align: right;">2</p>

15.)



4

16.)

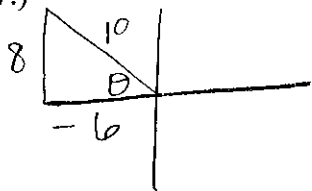
$$y = -\frac{3}{4}x + 2$$

$$x = -\frac{3}{4}y + 2 \quad -\frac{4}{3}(y-2)$$

$$x-2 = -\frac{3}{4}y(-\frac{4}{3}), -\frac{4}{3}y + \frac{8}{3}$$

2

17.)



$$\cos \theta = \frac{A}{H}$$

$$-\frac{3}{5}$$

1

18.)

graph in calc

1

19.)

$$4(x^2 - 6x + 9) + 4(y^2 + 18y + 81) = 76$$

$$(x-3)^2 + (y+9)^2 = 436$$

4

20.)

graph faces down
so negative coefficient

2

21.)

$$(1.0525)^{\frac{1}{12}} m$$

$$(1.00427)^m$$

3

22.)

put in calc
-1.1 -3.9 2.1

4

23.)

Recursive need $a_1 =$

3

24.)

$$\frac{2\pi}{b}$$

4

25.)

$$3 \frac{1}{x} - \frac{1}{3x} = -\frac{1}{3x}$$

$$3 - \frac{1}{x} = -\frac{1}{3x}$$

$$-x = -4 \quad \text{Checks}$$

$$x = 4$$

26.)

Create 2 random groups give one toothpaste with ingredient X & other one toothpaste without it

$$2(5)^3 - 4(5)^2 - 7(5) - 10$$

$$105$$

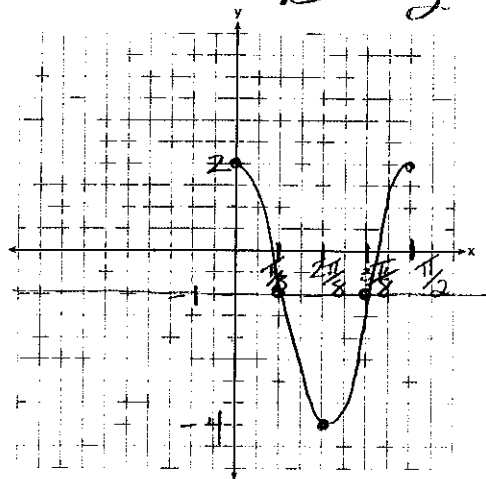
no remainder
is not 0

$$28.) a = 3$$

$$b = \frac{2\pi}{10} = \frac{\pi}{5} \quad \cancel{b} = 4\pi$$

$$b = 4$$

$$m = -1$$



$$\frac{\pi}{2} \left(\frac{1}{4} \right)$$

$$29.) P(A) + P(B) - P(A \cap B) = P(A \cup B)$$

$$\frac{649}{1376} + \frac{433}{1376} - x = \frac{974}{1376}$$

$$\boxed{\frac{108}{1376}}$$

$$30.) \frac{12(y+3)}{12} = \frac{(x-4)^2}{12}$$

$$y = \frac{1}{12}(x-4)^2 - 3$$

$$\boxed{\text{Focus } (4, 0)}$$

31.)

$$\frac{x^3 + 9}{x^3 + 8} = 1 + \frac{1}{x^3 + 8}$$

$$\frac{x^3 + 9}{x^3 + 8} = \frac{x^3 + 8}{x^3 + 8} + \frac{1}{x^3 + 8}$$

$$\frac{x^3 + 9}{x^3 + 8} = \frac{x^3 + 9}{x^3 + 8} \checkmark$$

32.)

$$135,000 = 100,000(1+r)^5$$

$$\frac{135,000}{100,000} = \frac{100,000}{100,000}(1+r)^5$$

$$\sqrt[5]{1.35} = \sqrt[5]{(1+r)^5}$$

$$1.061858759 = 1 + r$$

$$.061858759$$

$$\boxed{6\%}$$

$$33.) (x-3)^2 + (y+2)^2 = 16$$

$$\frac{2y}{2} = \frac{-2x+10}{2}$$

$$y = -x+5$$

$$2x^2 - 20x + 42 = 0$$

$$2(x^2 - 10x + 21) = 0$$

$$2(x-3)(x-7) = 0$$

$$x=3 \quad | \quad x=7$$

$$(x-3)^2 + (-x+5+2)^2 = 16$$

$$x^2 - 6x + 9 + (-x+7)(-x+7) = 16$$

$$x^2 - 6x + 9 + x^2 - 14x + 49 = 16$$

$$2x^2 - 20x + 58 = 16$$

$$\boxed{(3, 2) \quad (7, -2)}$$

$$34.) S_n = \frac{33,000 - 33,000(1.04)^n}{1 - 1.04}$$

$$S_{15} = \frac{33,000 - 33,000(1.04)^{15}}{1 - 1.04}$$

$$= 660,778.392$$

$$= \boxed{\$660,778.39}$$

35.)

$$.602 - 2(.066) = .47$$

$$.602 + 2(.066) = .734$$

$$\boxed{.47 - .73}$$

Yes .50 is in 95% CI

so it is possible

g(x)

(-2, -49) (4, 179)

$$\frac{179 - (-49)}{4 - (-2)}$$

$$\frac{228}{6} = 38$$

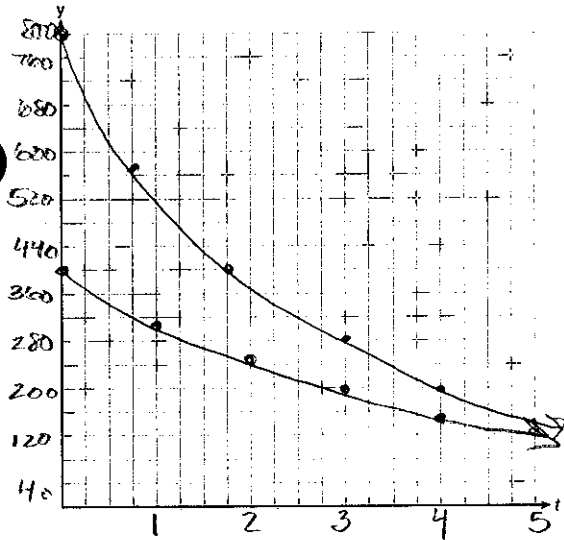
f(x)

(-2, 1.25) (4, 80)

$$\frac{80 - 1.25}{4 - (-2)} = 13.125$$

g(x) 38 > 13.125

37.



$$\begin{cases} A(t) = 800e^{-.347t} \\ B(t) = 400e^{-.231t} \end{cases}$$

16 hrs.

$$120 = 800e^{-.347t}$$

$$\ln .15 = \frac{\ln 800 - .347t}{1}$$

$$\frac{\ln .15}{-.347} = t$$

5.467204567

5.5 hrs