

MATH 112B

Review #1

$$1. \begin{matrix} 5 & -1 & -7 & -13 & -19 & -25 \\ \checkmark & \checkmark & \checkmark & \checkmark & \checkmark & \checkmark \\ D_1 & -6 & -6 & -6 & -6 & -6 \end{matrix}$$

A. LINEAR

$$\boxed{\text{EQUATION: } y = -6x + 11}$$

$$2. \begin{matrix} 1 & 15 & 71 & 223 & 549 & 1151 \\ \checkmark & \checkmark & \checkmark & \checkmark & \checkmark & \checkmark \end{matrix}$$

$$D_1 \begin{matrix} 14 & 56 & 152 & 326 & 602 \\ \checkmark & \checkmark & \checkmark & \checkmark & \checkmark \end{matrix}$$

$$D_2 \begin{matrix} 42 & 96 & 174 & 276 \\ \checkmark & \checkmark & \checkmark & \checkmark \end{matrix}$$

$$D_3 \begin{matrix} 54 & 78 & 102 \\ \checkmark & \checkmark & \checkmark \end{matrix}$$

$$D_4 \begin{matrix} 24 & 24 \\ \checkmark & \checkmark \end{matrix}$$

D. QUARTIC

$$\boxed{\text{EQUATION: } y = x^4 - 1x^3 + 2x^2 - 1}$$

$$3. \begin{matrix} 3 & 12 & 48 & 192 & 768 & 3072 \\ \nearrow & \nearrow & \nearrow & \nearrow & \nearrow & \nearrow \\ x4 & x4 & x4 & x4 & x4 & x4 \end{matrix}$$

E. GEOMETRIC

$$\boxed{\begin{aligned} \text{EQUATION: } t_n &= t_1 r^{n-1} \\ t_n &= 3(4)^{n-1} \end{aligned}}$$

$$4. \begin{matrix} 5 & 3 & -3 & -13 & -27 & -45 \\ \checkmark & \checkmark & \checkmark & \checkmark & \checkmark & \checkmark \end{matrix}$$

$$D_1 \begin{matrix} -2 & -6 & -10 & -14 & -18 \\ \checkmark & \checkmark & \checkmark & \checkmark & \checkmark \end{matrix}$$

$$D_2 \begin{matrix} -4 & -4 & -4 & -4 \\ \checkmark & \checkmark & \checkmark & \checkmark \end{matrix}$$

B. QUADRATIC

$$\boxed{\begin{aligned} \text{EQUATION: } y &= -2x^2 + 4x + 3 \end{aligned}}$$

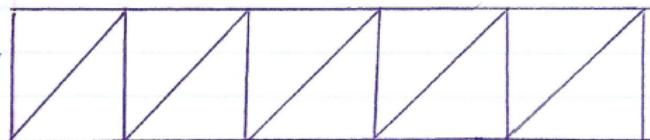
5. Using:

	2	3	10	29	66	127
D ₁	1	7	19	37	61	
D ₂	6	12	18	24		
D ₃	6	6	6			

C. CUBIC EQUATION:

$$y = 1x^3 + 2$$

6.



$$1 \text{ section} = 5$$

$$2 \text{ sections} = 9$$

$$3 \text{ sections} = 13$$

$$4 \text{ sections} = 17$$

$$5 \text{ sections} = 21$$

* 100 sections (Need to use the formula)

$$t_1 = 5$$

$$t_n = t_1 + (n-1)d$$

$$d = 4$$

$$t_n = 5 + (n-1)4$$

$$t_n = 5 + 4n - 4$$

$$t_n = 4n + 1$$

For 100 sections:

$$t_n = 4n + 1$$

$$t_{100} = 4(100) + 1$$

$$t_{100} = 400 + 1$$

$$t_{100} = 401$$

7. See Graph:

(A) When is the rocket 12 m above the ground?

2 sec 18 sec

(B) What is the maximum height of the rocket?

32 m

(C) How high is the rocket after 14 seconds?

28 m

(D) During which time period is the rocket climbing 0sec to 10 sec.