

MATH 112B

Review #1

1. $5, -1, -7, -13, -19, -25$
 $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow$

D_1 $-6 \quad -6 \quad -6 \quad -6 \quad -6$

A. LINEAR

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

2. $1, 15, 71, 223, 549, 1151$
 $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow$

D_1 $14 \quad 56 \quad 152 \quad 326 \quad 602$
 $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow$

D_2 $42 \quad 96 \quad 174 \quad 276$
 $\downarrow \quad \downarrow \quad \downarrow$

D_3 $54 \quad 78 \quad 102$
 $\downarrow \quad \downarrow$

D_4 $24 \quad 24$

D. QUARTIC

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

3. 3, 12, 48, 192, 768, 3072

$\xrightarrow{\times 4}$ $\xrightarrow{\times 4}$ $\xrightarrow{\times 4}$ $\xrightarrow{\times 4}$ $\xrightarrow{\times 4}$

E. GEOMETRIC

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

4. 5, 3, -3, -13, -27, -45

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D_1 -2 -6 -10 -14 -18

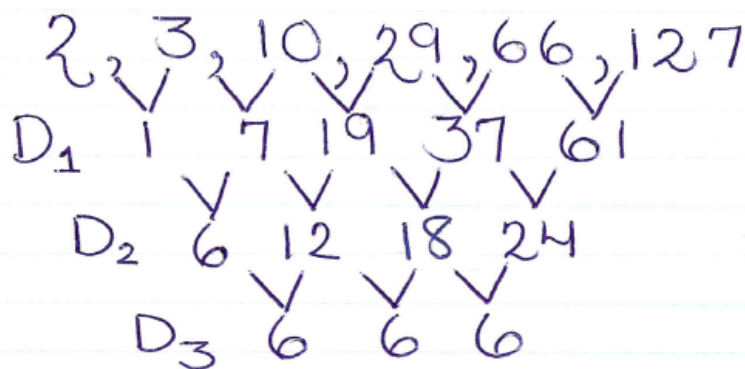
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D_2 -4 -4 -4 -4

B. QUADRATIC

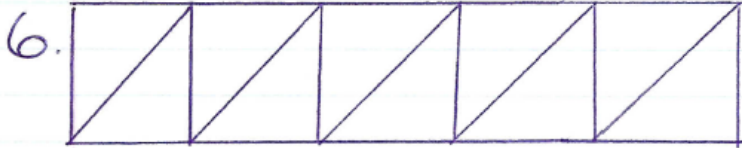
$$\begin{aligned} \text{EQUATION: } \\ y &= -2x^2 + 4x + 3 \end{aligned}$$

5. Using:



C. CUBIC

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



- 1 section = 5
- 2 sections = 9
- 3 sections = 13
- 4 sections = 17
- 5 sections = 21

* 100 sections (Need to use the formula)

$$t_1 = 5$$

$$d = 4$$

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

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

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

$$t_n = 4n + 1$$

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 0 sec to 10 sec.