

MATH 112B

Review # 1

1. $5, -1, -7, -13, -19, -25$
 $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow$
 $D_1 \quad -6 \quad -6 \quad -6 \quad -6 \quad -6$

A. LINEAR

EQUATION: $y = -6x + 11$

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

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

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

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

$D_4 \quad 24 \quad 24$

D. QUARTIC

EQUATION: $y = 1x^4 - 1x^3 + 2x^2 - 1$

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

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

E. GEOMETRIC

EQUATION: $t_n = t_1 r^{n-1}$ $t_n = 3(4)^{n-1}$

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

\surd \surd \surd \surd \surd

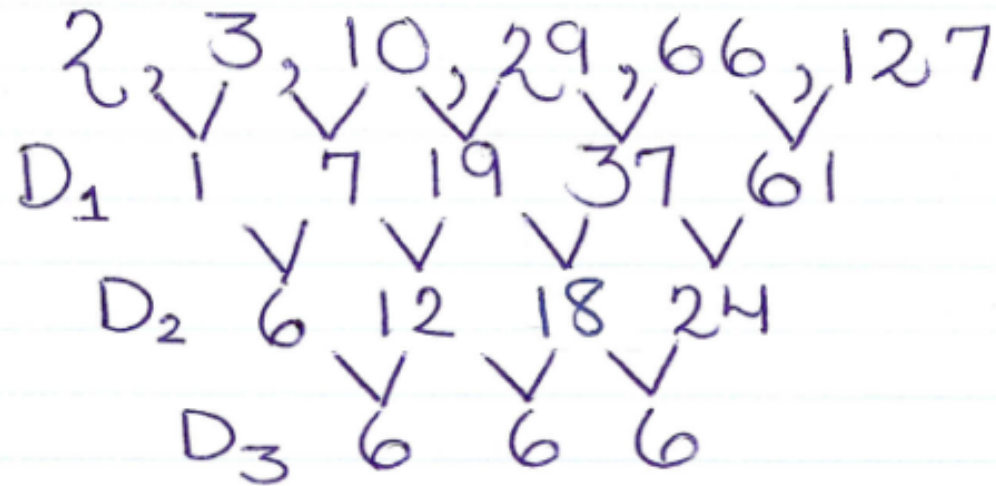
D_1 -2 -6 -10 -14 -18

D_2 -4 -4 -4 -4

B. QUADRATIC

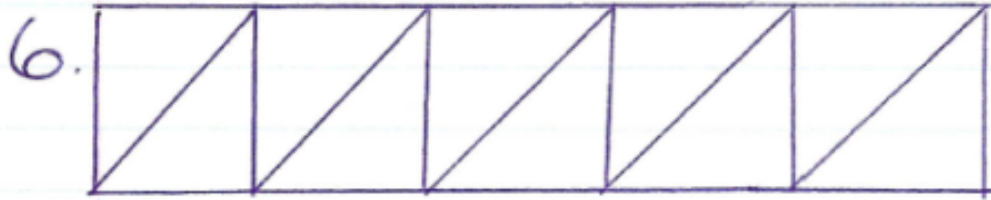
EQUATION: $y = -2x^2 + 4x + 3$

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)

$$\begin{aligned}
 t_1 &= 5 & t_n &= t_1 + (n-1)d \\
 d &= 4 & t_n &= 5 + (n-1)4 \\
 & & t_n &= 5 + 4n - 4 \\
 & & t_n &= 4n + 1
 \end{aligned}$$

For 100 sections:

$$\begin{aligned}
 t_n &= 4n + 1 \\
 t_{100} &= 4(100) + 1 \\
 t_{100} &= 400 + 1 \\
 t_{100} &= 401
 \end{aligned}$$

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.