

Word Problem Sequences (1)

DO NOT SOLVE THE PROBLEMS. Instead, for each problem:

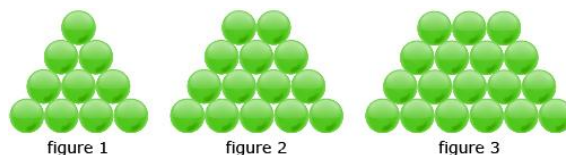
1. Build a table using the information provided.
2. Identify whether $y - y_1 = \frac{\text{rise}}{\text{run}}(x - x_1)$ is needed or if you can use slope, m , and y-intercept, b .
3. Build a formula, $y = mx + b$, using your chosen method.

1. A pediatric record shows that a child was **70 cm tall at age 3** and **105 cm tall at age 10**.

- a) How tall is the child expected to be at **age 14**?
- b) At what **age** will the child reach **150 cm**?

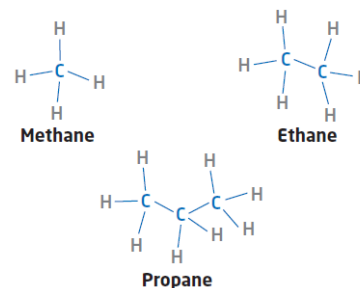
2. Using the figures to the left,

- a) Find the number of marbles in figure 20.
- b) Which figure has 206 marbles?



3. Hydrocarbons are the building blocks of thousands of products, including fuels, plastics, and synthetic fibres. Some hydrocarbon compounds contain only carbon and hydrogen atoms.

- a) How many hydrogen atoms does octane have?
- b) How many carbon atoms are required to support 202 hydrogen atoms?



4. A child's allowance was **\$5 at age 4**, and through yearly raises, it had grown to **\$44 at age 17**.

- a) How much will the weekly allowance be at **age 20**?
- b) At what **age** will the allowance reach **\$50**?

5. A runner began training and logged **5 km in week 1** and **19 km in week 8**.

- a) How many kilometres will the runner complete in **week 12**?
- b) In which **week** will the runner run **25 km**?

6. A savings bond was worth **\$1000 after 0 years** and **\$1400 after 10 years**.

- a) What will the value of the bond be after **18 years**?
- b) After how many **years** will the bond reach **\$1600**?

7. A furnace technician charges **\$60 for a house call (0 hours)** and **\$460 when the job takes 10 hours**.

- a) What will the charge be for **15 hours** of labour?
- b) How many **hours** were worked if the bill was **\$820**?

8. A community events leader earned **\$16 for 1 hour of work** and **\$64 for 3 hours of work**.

- a) How much will the leader earn for **6 hours** of work?
- b) After how many **hours** will the total pay be **\$160**?

9. On Banks Island in northern Canada, the musk-ox population was **9250 animals in 1955** and grew to **100 000 animals in 2010**.

- a) Estimate the population in **2030**.
- b) In what **year** will the population reach **200 000**?

10. During a fitness program, Susan recorded **11 sit-ups on day 6** and **29 sit-ups on day 15**.
- a) How many sit-ups will she complete on **day 40**?
 - b) On what **day** will she complete **100 sit-ups**?