

Video 266

1

- a) $y = 2$ and $y = \frac{1}{2}$ b) $x = \frac{3}{4}$ and $x = -1$ c) $y = 2\frac{1}{2}$ and $y = -1\frac{1}{2}$
- d) $m = \frac{4}{5}$ and $m = -2$ e) $h = \frac{1}{3}$ and $h = -9$ f) $x = 1\frac{1}{2}$ and $x = -2\frac{1}{3}$
- g) $y = -\frac{4}{7}$ and $y = -\frac{1}{2}$ h) $w = \frac{5}{8}$ and $w = 11$ i) $x = 1\frac{1}{3}$ and $x = -1\frac{1}{5}$

2:

- a) $x = -2$ and $x = -\frac{1}{2}$ b) $x = -2\frac{1}{2}$ and $x = -1$ c) $x = -\frac{2}{5}$ and $x = -1$
- d) $x = -4$ and $x = -4\frac{1}{2}$ e) $x = -\frac{3}{5}$ and $x = -4$ f) $x = -2$ and $x = -\frac{1}{3}$
- g) $x = -\frac{1}{3}$ and $x = -1$ h) $x = \frac{1}{2}$ and $x = -4$ i) $x = 2$ and $x = -1\frac{1}{2}$
- j) $x = -3$ and $x = -\frac{2}{7}$ k) $x = -\frac{2}{3}$ and $x = 1$ l) $x = \frac{1}{5}$ and $x = 3$
- m) $x = 1$ and $x = -\frac{4}{3}$ n) $x = 1\frac{1}{2}$ and $x = 5$ o) $x = 2$ and $x = 1\frac{1}{7}$
- p) $x = -9\frac{1}{2}$ and $x = 2$ q) $x = 1\frac{1}{5}$ and $x = 5$ r) $x = 6$ and $x = -2\frac{2}{3}$

3:

- a) $x = -1\frac{1}{2}$ and $x = -\frac{1}{2}$ b) $x = -3\frac{1}{2}$ and $x = \frac{1}{2}$ c) $x = \frac{3}{4}$ and $x = 2$
- d) $x = -5$ and $x = -\frac{1}{6}$ e) $x = 4\frac{1}{2}$ and $x = -\frac{1}{2}$ f) $x = 1\frac{1}{2}$ and $x = -\frac{1}{4}$
- g) $x = \frac{1}{10}$ and $x = 1$ h) $x = -4\frac{1}{2}$ and $x = -\frac{2}{3}$ i) $x = -\frac{2}{3}$ and $x = 1\frac{1}{3}$
- j) $x = -2\frac{1}{2}$ and $x = 3\frac{1}{2}$ k) $x = -\frac{3}{4}$ and $x = -\frac{4}{3}$ l) $x = \frac{5}{14}$ and $x = -2$
- m) $x = -2\frac{1}{2}$ and $x = \frac{1}{3}$ n) $x = -\frac{1}{2}$ and $x = 2\frac{1}{3}$ o) $x = \frac{3}{8}$ and $x = 1\frac{1}{2}$

4:

- a) $x = \pm 1\frac{1}{2}$ b) $x = \pm 5\frac{1}{2}$ c) $x = \pm 1\frac{1}{4}$ d) $x = \pm \frac{1}{6}$
- e) $x = \pm 4\frac{2}{3}$ f) $x = \pm \frac{7}{10}$ g) $x = \pm 15$ h) $x = \pm \frac{15}{8}$

5:

- a) $x = 0$ and $x = -2\frac{1}{2}$ b) $x = 0$ and $x = 4\frac{1}{2}$ c) $x = 0$ and $x = -\frac{1}{3}$
- d) $x = 0$ and $x = -3\frac{3}{4}$ e) $x = 0$ and $x = -\frac{1}{5}$ f) $x = 0$ and $x = -2$
- g) $x = 0$ and $x = 7\frac{1}{2}$ h) $x = 0$ and $x = 1\frac{1}{4}$

6:

- a) $x = 1$ and $x = \frac{4}{5}$ b) $m = -3$ and $m = \frac{1}{2}$ c) $x = \frac{1}{9}$ and $x = -3$
- d) $x = -1$ and $x = -2\frac{1}{2}$ e) $x = 1\frac{1}{2}$ and $x = -3$ f) $x = 1$ and $x = -\frac{1}{3}$
- g) $x = -1\frac{1}{2}$ and $x = -\frac{1}{2}$

7:

- a) $x = 0$ and $x = 3\frac{1}{2}$ b) $x = -\frac{1}{2}$ and $x = \frac{3}{2}$ c) $x = -2$ and $x = -\frac{1}{6}$
d) $x = -\frac{3}{4}$ and $x = \frac{1}{3}$

Apply:

1: 10 metres

2: The 4th term

3: 40 cm ($x = 2$)

4: 48cm^3 ($x = 3$)

5a: Using Pythagoras

$$\therefore (x + 1)^2 + (2x + 4)^2 = (4x - 3)^2$$

$$\therefore x^2 + 2x + 1 + 4x^2 + 16x + 16 = 16x^2 - 24x + 9$$

$$\therefore 11x^2 - 42x - 8 = 0 \quad \text{as required}$$

b: $x = 4$

6a: $x = 2$ or $x = -1\frac{7}{9}$

b: If $x = 2$, the 4th term is 54

If $x = -1\frac{7}{9}$, the 4th term is $-\frac{1024}{27}$