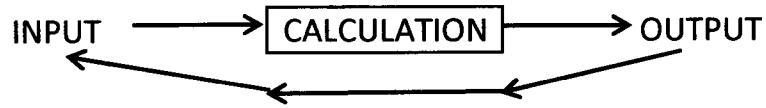


ITERATION

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ITERATION



The sequence will CONVERGE to a number.
This is the answer.

This is an iteration formula

$$u_{n+1} = \frac{u_n + 4}{3}$$

n stands for the nth term. Like sequences.

u_1 is the first term. Put this in the formula. The answer is called u_2

u_2 is the second term. Put this in the formula. The answer is called u_3

u_3 is the third term. Put this in the formula. The answer is called u_4

$$u_1 = \boxed{7}$$

$$u_1 = 7$$

$$n=1 \quad u_2 = \frac{u_1 + 4}{3} = \frac{\boxed{} + 4}{3} = \boxed{}$$

$$n=2 \quad u_3 = \frac{u_2 + 4}{3} = \frac{\boxed{} + 4}{3} = \boxed{}$$

$$n=3 \quad u_4 = \frac{u_3 + 4}{3} = \frac{\boxed{} + 4}{3} = \boxed{}$$

$$n=4 \quad u_5 = \frac{u_4 + 4}{3} = \frac{\boxed{} + 4}{3} = \boxed{}$$

$$n=5 \quad u_6 = \frac{u_5 + 4}{3} = \frac{\boxed{} + 4}{3} = \boxed{}$$

$$n=6 \quad u_7 = \frac{u_6 + 4}{3} = \frac{\boxed{} + 4}{3} = \boxed{}$$

①

Iteration

1) $x_{n+1} = \sqrt{20 - x_n}$

On your calculator

- 1) 5 =
- 2) $\sqrt{20 - Ans}$
- 3) = (also SD if answer not a decimal)
- 4) Repeat pressing =

x ₁	5	Round to 4 d.p.
x ₂		
x ₃		
x ₄		
x ₅		
x ₆		

The answer is x = _____

This is the solution to the equation $x^2 + x = 20$. Show this is true.

2) $x_{n+1} = \sqrt[3]{3x_n + 25}$

On your calculator

- 1) 4 =
- 2) $\sqrt[3]{3 \times Ans + 25}$
- 3) = (also SD if answer not a decimal)
- 4) Repeat pressing =

x ₁	4	Round to 4 d.p.
x ₂		
x ₃		
x ₄		
x ₅		
x ₆		
x ₇		

The answer is x = _____ to 2 d.p.

This is the solution to the equation $x^3 - 3x = 25$. Show this is true.

3) $x_{n+1} = \frac{1}{x_n} + 3$

On your calculator

- 1) 3 =
- 2) $\frac{1}{Ans} + 3$
- 3) = (also SD if answer not a decimal)
- 4) Repeat pressing =

x ₁	3	round to 4 d.p.
x ₂		
x ₃		
x ₄		
x ₅		
x ₆		
x ₇		

The answer is x = _____ to 2 d.p.

This is the solution to the equation $x^2 - 3x - 1 = 0$. Show this is true.