

Hello world

$$k_{n+1} = n^2 + k_n^2 - k_{n-1} \quad (1)$$

Khan Academy Question 2 Simplify the following for h

$$S = 2\pi r(r + h) \quad (2)$$

$$S/2\pi r = r + h \quad (3)$$

$$h = (S/2\pi r) - r \quad (4)$$

$$S = 250; r = 4; h = (S/2\pi r) - r; h = 5.94718394325 \quad (5)$$

Does the following have an x-intercept?

$$f(x) = x(x + 4) \quad (6)$$

What is the rough y-intercept of

$$[-3..3]f(x) = (x + 3)(1 - x) \Rightarrow 2.8$$

The y-intercept is the value at  $f(0)$  The x-intercept is the value where  $f(x) = 0$  Periodic is a repeating or looping graph An even graph has  $f(x) = f(-x)$  or will look the same reflected over the y-axis An odd graph has  $-f(x) = f(-x)$  or will look mirrored over the x axis

What is the approximate maximum value of the formula:

$$\max(-x^2 + 6x - 1) = 8 \quad (7)$$

## 1 New section

Solve for h

$$A = 1/2(b + c)h \quad (8)$$

$$A/(1/2(b + c)) = h \quad (9)$$

$$2A/(b + c) = h \quad (10)$$

To store a variable and solve, use “st” and “=”.

For example: I want to solve

$$E/c^2$$

I type it exactly, then type my value for E, type stE, type my value for c, and type stc

## 2 New section

What is the height of a trapezoid with one base equal to 20 m, the other base equal to 7m, and an area of 135m? It is 10m.

Solve

$$m = E/(c^2)$$

for

$$c = 300,000,000m/s$$

and

$$E = 1.8e14J$$

$$m = 2e - 3$$

## 3 New section

The Area of a trapezoid is

$$A = (1/2)(b + c)h$$

solve for b

$$A/(1/2)(h) = b + c$$

$$(A/(1/2)h) - c = b$$

$$b = 2A/h - c$$

When

$$A = 80ft^2$$

$$h = 10ft$$

$$c = 5ft$$

$$b = 11$$

## 4 New section

Kinetic Energy object in motion

$$K = 1/2mv^2$$

solve for velocity v

$$m = 800$$

$$K = 100000$$

$$\text{sqrt}(2K/m)$$

$$\text{sqrt}(2100000/800) = 15.8113883008$$

## 5 New section

Net income formula is

$$NI = (SP - VC)(V) - FC$$

solve for V where

$$NI = 5000$$

$$SP = 40$$

$$VC = 15$$

$$FC = 1000$$

$$NI + FC = (SP - VC)V$$

$$V = (NI + FC)/(SP - VC)$$

$$V = (NI + FC)/(SP - VC)$$

$$= 240$$

## 6 New section

What is the y-intercept or  $x(0)$  of

$$-(x - 1)(x + 3)$$

it should be

$$3$$

## 7 New section

What is the limit as  $x$  approaches 0?

$$\lim_{x \rightarrow 0} \frac{\cos 2x - \cos 3x}{x^2}$$

Appears to be 2.5 3.99631755994

## 8 Factoring

Use the quadratic formula:

$$(x + a)(x + b)$$

$$x^2 + xb + ax + ab$$

$$x^2 + (a + b)x + ab$$

To factor

$$x^2 + 10x + 9$$

$$a + b = 10$$

$$ab = 9$$

Factors of 9 are 1,3,9

$$1 + 9 = 10$$

$$1 * 9 = 9$$

To factor

$$x^2 - 1$$