

Must Know Euler's Method of Differential Equation For Calculus BC

Lesson 329 | Calculus BC | Euler's method

<https://www.youtube.com/watch?v=Am2oi41UU9w>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Use Euler's method with step $h=0.1$ for $y'=x+2$, $y(0)=7$, to estimate $y(0.2)$.

02

Use Euler's method with step $h=0.1$ for $y'=x+10$, $y(0)=14$, to estimate $y(0.2)$.

03

Use Euler's method with step $h=0.1$ for $y'=x+10$, $y(0)=7$, to estimate $y(0.2)$.

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04

Use Euler's method with step $h=0.1$ for $y'=x+8$, $y(0)=5$, to estimate $y(0.2)$.

05

Use Euler's method with step $h=0.1$ for $y'=x+13$, $y(0)=7$, to estimate $y(0.2)$.

06

Use Euler's method with step $h=0.1$ for $y'=x+10$, $y(0)=2$, to estimate $y(0.2)$.

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01

Use Euler's method with step $h=0.1$ for $y'=x+2$, $y(0)=7$, to estimate $y(0.2)$.

$y_1=7+0.1(0+2)=36/5$ at $x=0.1$. $y_2=y_1+0.1(0.1+2)=741/100$. Use the left-end slope at each step.

02

Use Euler's method with step $h=0.1$ for $y'=x+10$, $y(0)=14$, to estimate $y(0.2)$.

$y_1=14+0.1(0+10)=15$ at $x=0.1$. $y_2=y_1+0.1(0.1+10)=1601/100$. Use the left-end slope at each step.

03

Use Euler's method with step $h=0.1$ for $y'=x+10$, $y(0)=7$, to estimate $y(0.2)$.

$y_1=7+0.1(0+10)=8$ at $x=0.1$. $y_2=y_1+0.1(0.1+10)=901/100$. Use the left-end slope at each step.

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04

Use Euler's method with step $h=0.1$ for $y'=x+8$, $y(0)=5$, to estimate $y(0.2)$.

$y_1=5+0.1(0+8)=29/5$ at $x=0.1$. $y_2=y_1+0.1(0.1+8)=661/100$. Use the left-end slope at each step.

05

Use Euler's method with step $h=0.1$ for $y'=x+13$, $y(0)=7$, to estimate $y(0.2)$.

$y_1=7+0.1(0+13)=83/10$ at $x=0.1$. $y_2=y_1+0.1(0.1+13)=961/100$. Use the left-end slope at each step.

06

Use Euler's method with step $h=0.1$ for $y'=x+10$, $y(0)=2$, to estimate $y(0.2)$.

$y_1=2+0.1(0+10)=3$ at $x=0.1$. $y_2=y_1+0.1(0.1+10)=401/100$. Use the left-end slope at each step.