PRINT NAME: Elizabeth Martinez

PERM NUMBER: 812 194 - 9

Put your answer in the box provided.

TA: ☐ Garo ☒ Trevor ☐ Sam

Time: ☒ 8am ☐ 5pm ☐ 6pm ☐ 7pm

1. Andy is out for a run. The rate at which Andy burns calories depends on the pace of his run – a faster pace burns calories quicker. Let x be his pace, in minutes per kilometer, and $f(x)$ be the rate at which he burns calories (in calories per hour) at pace x.

(a) What are the units of $f'(x)$?

$$\frac{f(x)}{x} =$$

Calories per hour / minute per kilometer

$$\boxed{\frac{\text{Calories per hour}}{\text{minutes per kilometer}}}$$

$f(x)$ = the rate at which he burns calories (calories per hour)

x = his pace , in minutes per kilometer

$$64 \overline{)240}$$

$$\begin{array}{r} 6\,4 \\ \times 3 \end{array}$$

(b) If $f(x) = 240/x$, what is the average rate of change between $x = 8$ and $x = 10$?

$$\boxed{\frac{-\frac{240}{64} - \left(-\frac{240}{100}\right)}{10 - 8}}$$

$f(x) = 240x^{-1} = f'(x) = -240x^{-2}$

$f'(8) = -\frac{240}{8^2 = 64}$

$f'(10) = -\frac{240}{10^2 = 100}$

$$\frac{f'(b) - f'(a)}{b - a}$$

$$\frac{-240}{64} \div 2 =$$

f'

120

$$2\overline{)240}$$

$$2\overline{)64}^{\,3}$$

$$\begin{array}{r} 3 \\ \hline 34 \end{array}$$

$$\frac{-\frac{240}{64} - \left(-\frac{240}{100}\right)}{10 - 8}$$

PRINT NAME Anna Bound

Put your answer in the | box | provided.

TA: ☐ Garo ☒ Trevor   ☐ Sam

Time: ☒ 8am ☐ 6pm   ☐ 5pm ☐ 7pm

1. Andy is out for a run. The rate at which Andy burns calories depends on the pace of his run – a faster pace burns calories quicker. Let x be his pace, in minutes per kilometer, and $f(x)$ be the rate at which he burns calories (in calories per hour) at pace x.

(a) What are the units of $f'(x)$?

Calories per hour

$f(8) = 30$

at a pace of 8 mins per km he will burn 30 calories per hr

$f'(3) =$

avg rate of cal per hour

(b) If $f(x) = 240/x$, what is the average rate of change between $x = 8$ and $x = 10$?

-3

$f(8) = \dfrac{240}{8} = 30$

$f(10) = \dfrac{240}{10} = 24$

$\dfrac{\Delta f}{\Delta x} = \dfrac{24 - 30}{10 - 8} = \dfrac{-6}{2} = \boxed{-3}$

PRINT NAME Jerelyn Garcia Juarez

Put your answer in the [box] provided.

TA: ☐ Garo ■ Trevor   Time: ■ 8am ☐ 6pm
    ☐ Sam   ☐ 5pm ☐ 7pm

1. Andy is out for a run. The rate at which Andy burns calories depends on the pace of his run – a faster pace burns calories quicker. Let x be his pace, in minutes per kilometer, and $f(x)$ be the rate at which he burns calories (in calories per hour) at pace x.

(a) What are the units of $f'(x)$?

$$\frac{\text{calories burned mins}}{\text{pace in mins/kilo}}$$

$$f'(x) = \frac{\text{rate}}{\text{pace}} = \frac{\text{calories burned/hour}}{\text{pace in mins/kilo}}$$

(b) If $f(x) = 240/x$, what is the average rate of change between $x = 8$ and $x = 10$?

[3]

$$f(x) = \frac{240}{x}$$

$$f(8) = \frac{240}{8} = 30$$

$$f(10) = \frac{240}{10} = 24$$

$$\text{rate of change} = \frac{30-24}{2} = \frac{6}{2} = 3$$

PRINT NAME **Siyuan Chen**

PERM NUMBER
6918445

Put your answer in the | box | provided.

TA: ☐ Garo ☑ Trevor   Time: ☑ 8am ☐ 6pm
☐ Sam   ☐ 5pm ☐ 7pm

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1. Andy is out for a run. The rate at which Andy burns calories depends on the pace of his run – a faster pace burns calories quicker. Let x be his pace, in minutes per kilometer, and $f(x)$ be the rate at which he burns calories (in calories per hour) at pace x.

(a) What are the units of $f'(x)$?

$$\boxed{\dfrac{\text{calories per hour}}{\text{minutes per kilometer}}}$$

$$f'(x) = \frac{\Delta f(x)}{\Delta x} = \frac{\text{unit of } f(x)}{\text{unit of } x}$$

$$= \frac{\text{calories per hour}}{\text{minutes per kilometer}}$$

$$= \frac{\frac{cal}{h}}{\frac{min}{km}}$$

$$= \frac{cal}{h} \cdot \frac{km}{min}$$

$$= \frac{cal}{1h} \cdot \frac{1h}{60min}$$

$$= \frac{cal}{60min} \cdot \frac{km}{min}$$

(b) If $f(x) = 240/x$, what is the average rate of change between $x = 8$ and $x = 10$?

$$\boxed{-3\ \dfrac{\text{calories per hour}}{\text{minutes per kilometer}}}$$

$$f(8) = 240/8 = 30$$

$$f(10) = 240/10 = 24$$

$$\therefore ARC = \frac{\Delta y}{\Delta x}$$

$$= \frac{24 - 30}{10 - 8}$$

$$= \frac{-6}{2}$$

$$= -3$$

PRINT NAME **Elise Ziem**

PERM NUMBER

3047172

Put your answer in the | box | provided.

TA: ☐ Garo ☒ Trevor ☐ Sam

Time: ☒ 8am ☐ 6pm ☐ 5pm ☐ 7pm

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1. Andy is out for a run. The rate at which Andy burns calories depends on the pace of his run – a faster pace burns calories quicker. Let x be his pace, in minutes per kilometer, and $f(x)$ be the rate at which he burns calories (in calories per hour) at pace x.

(a) What are the units of $f'(x)$?

Calories/Kilometer

x is pace (min/kilo)

$f(x)$ = rate of cal/hour at pace x

$f'(x)$ =

X min/kilo

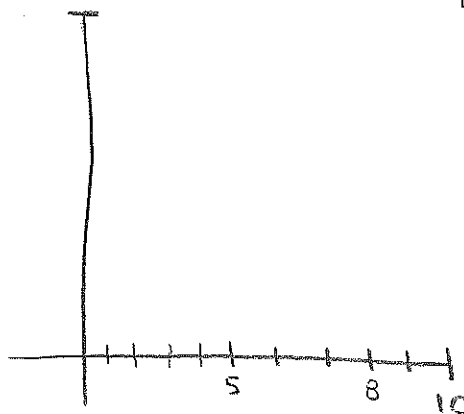(b) If $f(x) = 240/x$, what is the average rate of change between $x = 8$ and $x = 10$?

2

$f(x) = 240/x$

$240/8 = 30$

$240/10 = 24$

~~$\frac{y-8}{m(x-10)}$~~

PRINT NAME Anisha Reimert

PERM NUMBER 9709205

Put your answer in the box provided.

TA: ☐ Garo ☒ Trevor ☐ Sam

Time: ☒ 8am ☐ 6pm ☐ 5pm ☐ 7pm

1. Andy is out for a run. The rate at which Andy burns calories depends on the pace of his run – a faster pace burns calories quicker. Let x be his pace, in minutes per kilometer, and $f(x)$ be the rate at which he burns calories (in calories per hour) at pace x.

(a) What are the units of $f'(x)$?

$$\frac{calories}{kilometer}$$

(b) If $f(x) = 240/x$, what is the average rate of change between $x = 8$ and $x = 10$?

$$-3$$

$$f(x) = \frac{240}{x} \qquad f(8) = 30 \qquad f(10) = 24$$

$$\frac{df}{dx} \qquad \frac{f(10) - f(8)}{10 - 8}$$

$$\frac{24 - 30}{10 - 8}$$

$$= \frac{-6}{2}$$

$$= -3$$

PRINT NAME: Denise Cabrera

PERM NUMBER: 9476417

Put your answer in the [box] provided.

TA: ☐ Garo ☒ Trevor ☐ Sam

Time: ☒ 8am ☐ 6pm ☐ 5pm ☐ 7pm

1. Andy is out for a run. The rate at which Andy burns calories depends on the pace of his run – a faster pace burns calories quicker. Let x be his pace, in minutes per kilometer, and $f(x)$ be the rate at which he burns calories (in calories per hour) at pace x.

(a) What are the units of $f'(x)$?

pace = min per km

rate = cal per hr

$$\frac{km}{hr}$$

$$\frac{km}{hr}$$

(b) If $f(x) = 240/x$, what is the average rate of change between $x = 8$ and $x = 10$?

$$3$$

$$f(x) = \frac{240}{8} = 30$$

$$f(x) = \frac{240}{10} = 24$$

$$\frac{30-24}{10-8} \quad \frac{6}{2}$$

Sydney Rouse
PRINT NAME

PERM NUMBER
6674614

Put your answer in the | box | provided.

TA: ☐ Garo ☑ Trevor ☐ Sam

Time: ☐ 8am ☑ 5pm ☐ 6pm ☐ 7pm

1. Andy is out for a run. The rate at which Andy burns calories depends on the pace of his run – a faster pace burns calories quicker. Let x be his pace, in minutes per kilometer, and $f(x)$ be the rate at which he burns calories (in calories per hour) at pace x.
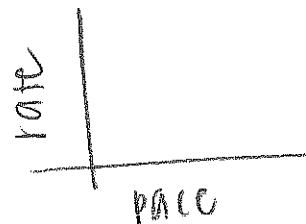
(a) What are the units of $f'(x)$? = slope

calories per km

x = pace (mins per kilometer)

y | $f(x)$ = rate which he burns calories (cal per hr)

slope = $\frac{y_2 - y_1}{x_2 - x_1}$ $\frac{\frac{cal}{hr}}{\frac{mins}{km}}$

$f'(x)$ = slope $\frac{cal}{} \cdot km$

(b) If $f(x) = 240/x$, what is the average rate of change between $x = 8$ and $x = 10$?

3

$f(x) = \frac{240}{x}$

$\frac{240}{8} = 30$

$\frac{240}{10} = 24$

$\frac{24 - 30}{10 - 8} = \frac{-6}{2} = 3$

PRINT NAME   Nathaly Castillo

PERM NUMBER   8153009

Put your answer in the [box] provided.   TA: ☐ Garo ☒ Trevor ☐ Sam   Time: ☒ 8am ☐ 5pm ☐ 6pm ☐ 7pm

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1. Andy is out for a run. The rate at which Andy burns calories depends on the pace of his run – a faster pace burns calories quicker. Let x be his pace, in minutes per kilometer, and $f(x)$ be the rate at which he burns calories (in calories per hour) at pace x.

(a) What are the units of $f'(x)$?

$$f'(x) = \frac{calories}{minutes}$$

$$\frac{f(x)}{x} = \frac{\cancel{rate}\ calories}{minutes}$$

(b) If $f(x) = 240/x$, what is the average rate of change between $x = 8$ and $x = 10$? $\underbrace{\qquad}_{x=2}$

$$\boxed{-60}$$

$$f(x) = \frac{240}{x} \longrightarrow \cancel{\frac{240}{x}}$$

$$\cancel{f(x) = 240 - x}$$

$$= 240 \cdot x^{-1}$$

$$f'(x) = 240 \cdot -1 x^{-2}$$

$$f'(2) = 240 \cdot \cancel{x} -1(2)^{-2}$$

$$f'(2) = 240 \cdot \frac{-1}{2^2} \implies 240 \cdot -\frac{1}{4} \implies -\frac{240}{4} = -60$$

PRINT NAME: Brisa Quezada

PERM NUMBER: 844506

Put your answer in the [box] provided.

TA: ☐ Garo ☑ Trevor ☐ Sam

Time: ☑ 8am ☐ 5pm ☐ 6pm ☐ 7pm

1. Andy is out for a run. The rate at which Andy burns calories depends on the pace of his run – a faster pace burns calories quicker. Let x be his pace, in <u>minutes per kilometer</u>, and $f(x)$ be the rate at which he burns calories (in calories per hour) at pace x.

(a) What are the units of $f'(x)$?

$f(x) = $ calories per hour (burns calories)

$f'(x) = $ minutes per km (his pace)

↳ slope

minutes per km

(b) If $f(x) = 240/x$, what is the average rate of change between $x = 8$ and $x = 10$?

$f(x) = \frac{240}{x}$

$x = 8$ & $x = 10$

$10\overline{)240} = 24$ remainder $\frac{20}{40}$

$8\overline{)240} = 30$, 24

$\frac{10-8}{24-30} = \frac{2}{-6} = -\frac{1}{3}$

$-\frac{1}{3}$

PRINT NAME Ash Phomuchasu

PERM NUMBER
8159782

Put your answer in the box provided.

TA: ☐ Garo ☒ Trevor   Time: ☒ 8am ☐ 6pm
    ☐ Sam   ☐ 5pm ☐ 7pm

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1. Andy is out for a run. The rate at which Andy burns calories depends on the pace of his run – a faster pace burns calories quicker. Let x be his pace, in minutes per kilometer, and $f(x)$ be the rate at which he burns calories (in calories per hour) at pace x.

(a) What are the units of $f'(x)$?

$x =$ pace min/km

$f(x) =$ rate calories burned (cal/hr) at pace x

$f'(x) =$ rate of pace at rate of calories burned x

(b) If $f(x) = 240/x$, what is the average rate of change between $x = 8$ and $x = 10$?

$\boxed{-3}$

$f(x) = \dfrac{240}{x}$ Avg RoC $= \dfrac{\Delta y}{\Delta x}$

$f(10) = \dfrac{240}{10} = 24$ $= \dfrac{24 - 30}{10 - 8}$

$f(8) = \dfrac{240}{8} = 30$ $= \dfrac{-6}{2} = \boxed{-3}$