ENED 1100 Date: 6/20/22
Assignment: HW 8.1 task 1a

Section: ENED 1100
Team: 72

Name: Burgess Dean III
Signature: Burgess Dean III

x/x

Problem Statement: 8.1 Measurements and Estimations task 1a

How many fans attended UC Homegames at Nippert Stadium in total?

Theory

Minimum # of college football home games: 5 games

Assumptions

1. An amount of fans showed up equal to the winning percentage of the total capacity of the stadium.

Solution

1. Take the winning percent of the first row of the total capacity of the stadium, and multiply by 5, the average amount of home games per season, then multiply by the number of years for the first row.

- $12,000 \cdot 0.52 \cdot 5 \cdot 12 = 374,400$ fans (1924-1935)

2. Repeat the process for the following rows.

- $24,000 \cdot 0.63 \cdot 5 \cdot 18 = 1,360,800$ fans (1936-1953)
- $28,000 \cdot 0.44 \cdot 5 \cdot 38 = 2,340,800$ fans (1954-1991)
- $35,000 \cdot 0.57 \cdot 5 \cdot 23 = 2,294,250$ fans (1992-2014)
- $38,000 \cdot 0.67 \cdot 5 \cdot 7 = 891,100$ fans (2015-2021)

3. Add the estimates together to get a total estimate.

$374,400 + 1,360,800 + 2,340,800 + 2,294,250 + 891,100 = 7,261,350$ fans (1924-2021)

ENED 1100 Date: 6/20/22 Assignment: HW 8.1 task 16	Section: ENED 1100 Team: 72	Name: Burgess Dean III Signature: Burgess Dean III	x/x

Problem Statement: 8.1 Measurements and Estimations task 16

How many miles have fans driven for VC Football games?

Theory

None

Assumptions

1. 75% of fans walked or carpooled
2. 20 miles driven for the remainder of the fans

Solution

1. Multiply total fans by 25% and round to the nearest whole number.

$7,261,350 \cdot 0.25 = 1,815,338$

2. Multiply that answer by 20.

$1,815,338 \cdot 20 = 36,30,650$ miles driven

ENED 1100 Date: 6/20/22 Assignment: HW 8.1 task 1b	Section: ENED 1100 Team: 72	Name: Burgess Dean III Signature: Burgess Dean III	x/x

Problem Statement: 8.1 Measurements and Estimations task 1c

How many pigs were slaughtered for UC Football brats?

Theory

- Civil War started in 1861
- $\frac{\Delta y}{\Delta x} = m$

Assumptions

1. Constant growth of pigs slaughtered from 1819 to present pigs

Solution

1. Find the slope of pigs slaughtered.

$$\frac{500,000 - 30,000}{1861 - 1819} = 11190.5 = m, \text{ slope}$$

2. Find the equation of pigs slaughtered growth

$$y - 30,000 = 11190.5(x - 1819)$$
$$y = 11190.5x - 20,325,519.5$$

3. Find the integral of this equation from 1924-2021

$$\int_{1924}^{2021} 11190.5x - 20,325,519.5 \, dx$$

$$5595.25x^2 - 20,325,519.5x + C$$

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x/x

4. Using the found equation, find the total number of slaughtered pigs.

$[595.25(2021)^2 - 20{,}325{,}519.5(2021) + C] - [595.25(1924)^2 - 20{,}325{,}519.5(1924) + C]$

$= 169{,}530{,}950$ pigs slaughtered in Cincinnati from (1924-2021)