AGEC 115: Decision Tools for Ag Econ and Agribusiness

Lecture 6.
IF Functions, Part 2

Instructor: Walter Ac-Pangan
walterac@ksu.edu

Fall 2024
Manhattan, Kansas

Kansas State University | Agricultural Economics

Recap from last week

- IF Function
- IF with AND or OR
  - IF(AND
  - IF(OR
- Nested IF
  - IFS/IF(IF..)

```
=IF(A1>=90, "A",
    IF(A1>=80, "B",
        IF(A1>=70, "C", "F")))

=IFs(A1>=90, "A",
        A1>=80, "B",
            A1>=70, "C", "F")
```

KANSAS STATE UNIVERSITY

Today's Agenda

- SUMIF
- COUNTIF
- AVERAGEIF

SIMPLE EXAMPLE

= SUMIF(search_range,criteria,[sum_range])

Suppose you have a list of sales in column A and the corresponding salespeople in column B. You want to sum up the sales made by a specific salesperson, "John"

- **=SUMIF(B1:B4, "John", A1:A4)**

A	B
5	John
3	Mike
7	John
4	Sarah

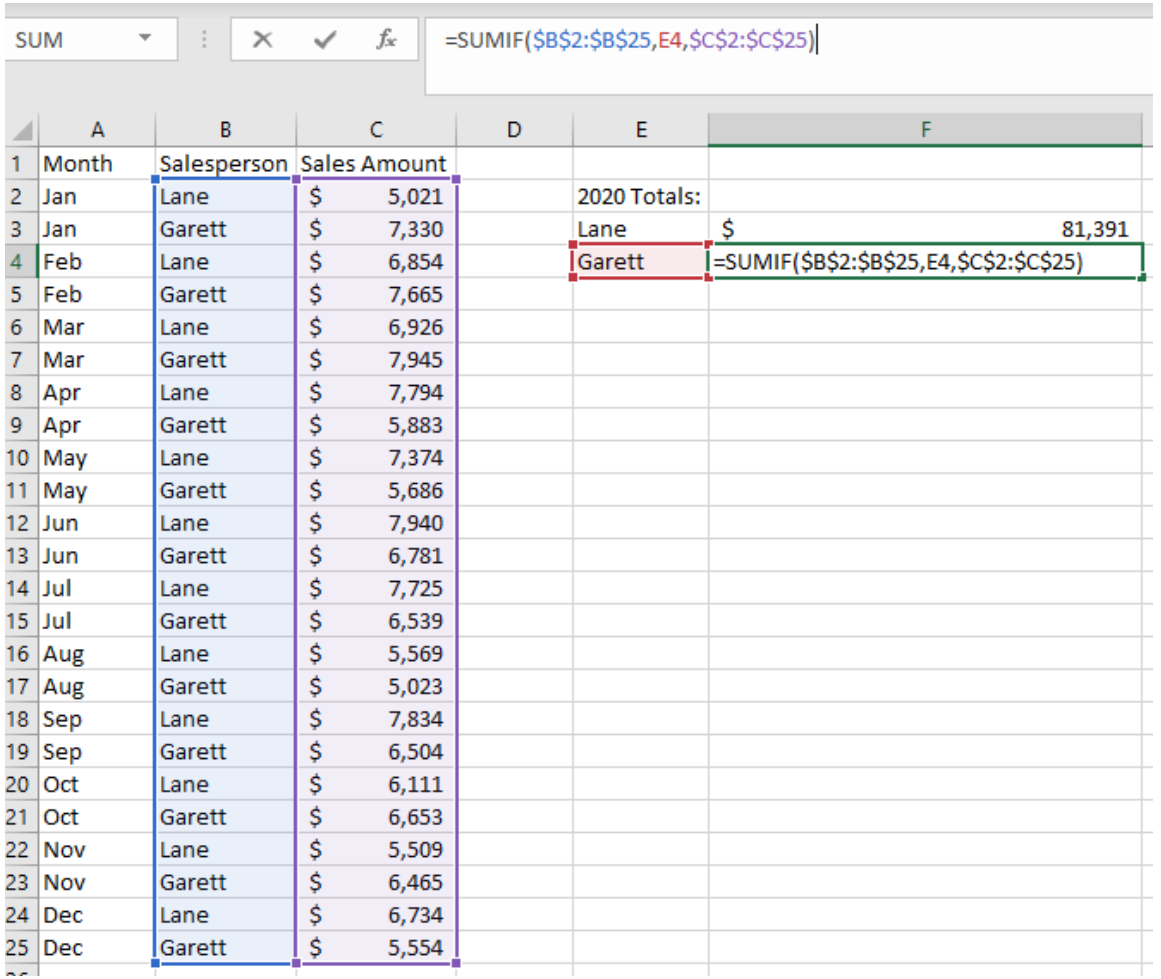
KANSAS STATE UNIVERSITY

SUMIF Function

- Combines the SUM and IF functions. You can summate based on one criterion.
- Excel will look for the criterion based on row.

=SUMIF(range,criteria,[sum_range])

→(Salesperson,{Name},Sales Amount)

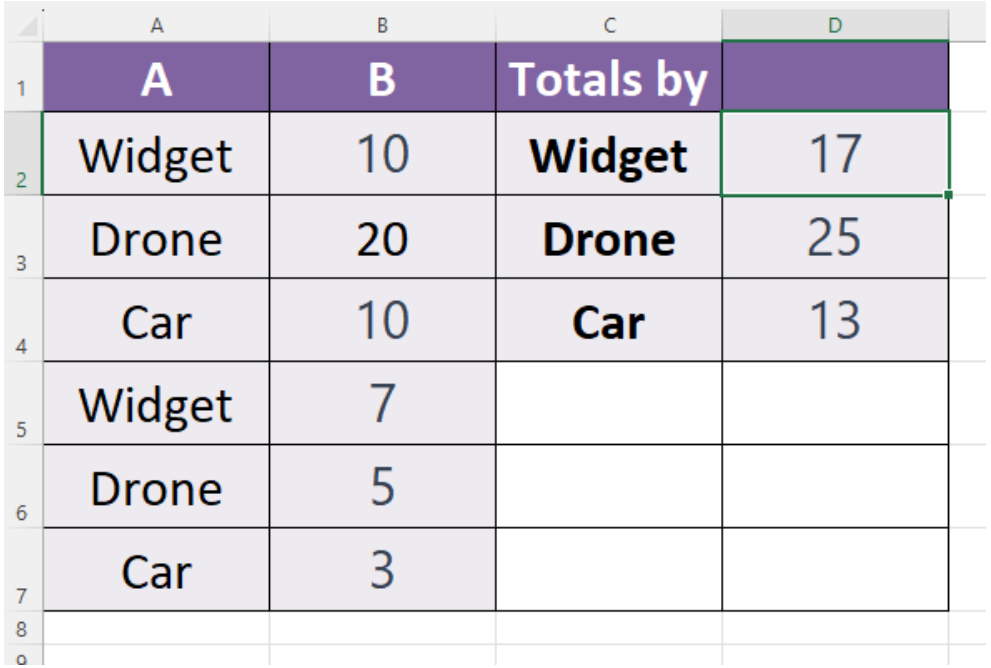


	A	B	C	D	E	F
1	Month	Salesperson	Sales Amount			
2	Jan	Lane	$ 5,021		2020 Totals:	
3	Jan	Garett	$ 7,330		Lane	$ 81,391
4	Feb	Lane	$ 6,854		Garett	=SUMIF($B$2:$B$25,E4,$C$2:$C$25)
5	Feb	Garett	$ 7,665			
6	Mar	Lane	$ 6,926			
7	Mar	Garett	$ 7,945			
8	Apr	Lane	$ 7,794			
9	Apr	Garett	$ 5,883			
10	May	Lane	$ 7,374			
11	May	Garett	$ 5,686			
12	Jun	Lane	$ 7,940			
13	Jun	Garett	$ 6,781			
14	Jul	Lane	$ 7,725			
15	Jul	Garett	$ 6,539			
16	Aug	Lane	$ 5,569			
17	Aug	Garett	$ 5,023			
18	Sep	Lane	$ 7,834			
19	Sep	Garett	$ 6,504			
20	Oct	Lane	$ 6,111			
21	Oct	Garett	$ 6,653			
22	Nov	Lane	$ 5,509			
23	Nov	Garett	$ 6,465			
24	Dec	Lane	$ 6,734			
25	Dec	Garett	$ 5,554			

KANSAS STATE UNIVERSITY

Question

You are using the SUMIF function in Excel to tally up sales for a specific product from a list. Your list has product names in column A and corresponding sales figures in column B. Which of the following formulas will give you the total sales for the product named "Widget"?



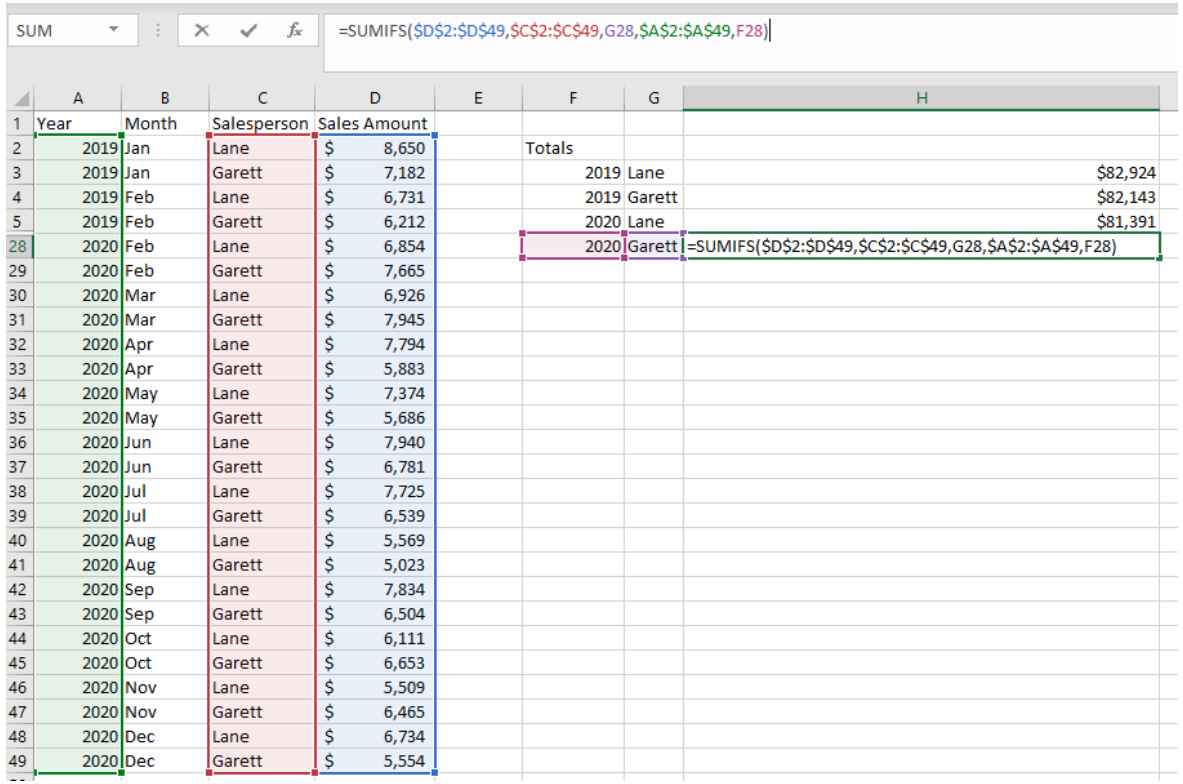
	A	B	C	D
1	A	B	Totals by	
2	Widget	10	Widget	17
3	Drone	20	Drone	25
4	Car	10	Car	13
5	Widget	7		
6	Drone	5		
7	Car	3		
8				

-
- A) =SUMIF($A$2:$A$7,C2,$B$2:$B$7)
- B) =SUMIF(B:B, "Widget", A:A)
- C) =SUMIF($A2:A7, “C2", $B$2:$B$7)
- D) =SUM(A2:A7)

KANSAS STATE UNIVERSITY

SUMIFS Function

- Could sum based on criteria.



	A	B	C	D	E	F	G	H
1	Year	Month	Salesperson	Sales Amount				
2	2019	Jan	Lane	$ 8,650		Totals		
3	2019	Jan	Garett	$ 7,182		2019	Lane	$82,924
4	2019	Feb	Lane	$ 6,731		2019	Garett	$82,143
5	2019	Feb	Garett	$ 6,212		2020	Lane	$81,391
28	2020	Feb	Lane	$ 6,854		2020	Garett	=SUMIFS($D$2:$D$49,$C$2:$C$49,G28,$A$2:$A$49,F28)
29	2020	Feb	Garett	$ 7,665				
30	2020	Mar	Lane	$ 6,926				
31	2020	Mar	Garett	$ 7,945				
32	2020	Apr	Lane	$ 7,794				
33	2020	Apr	Garett	$ 5,883				
34	2020	May	Lane	$ 7,374				
35	2020	May	Garett	$ 5,686				
36	2020	Jun	Lane	$ 7,940				
37	2020	Jun	Garett	$ 6,781				
38	2020	Jul	Lane	$ 7,725				
39	2020	Jul	Garett	$ 6,539				
40	2020	Aug	Lane	$ 5,569				
41	2020	Aug	Garett	$ 5,023				
42	2020	Sep	Lane	$ 7,834				
43	2020	Sep	Garett	$ 6,504				
44	2020	Oct	Lane	$ 6,111				
45	2020	Oct	Garett	$ 6,653				
46	2020	Nov	Lane	$ 5,509				
47	2020	Nov	Garett	$ 6,465				
48	2020	Dec	Lane	$ 6,734				
49	2020	Dec	Garett	$ 5,554				

=SUMIFS(sum_range,criteria_range1,criteria1,[criteria_range1],[criteria1],…)

→(Sales Amount,Salesperson,{Name},Year,{Year})

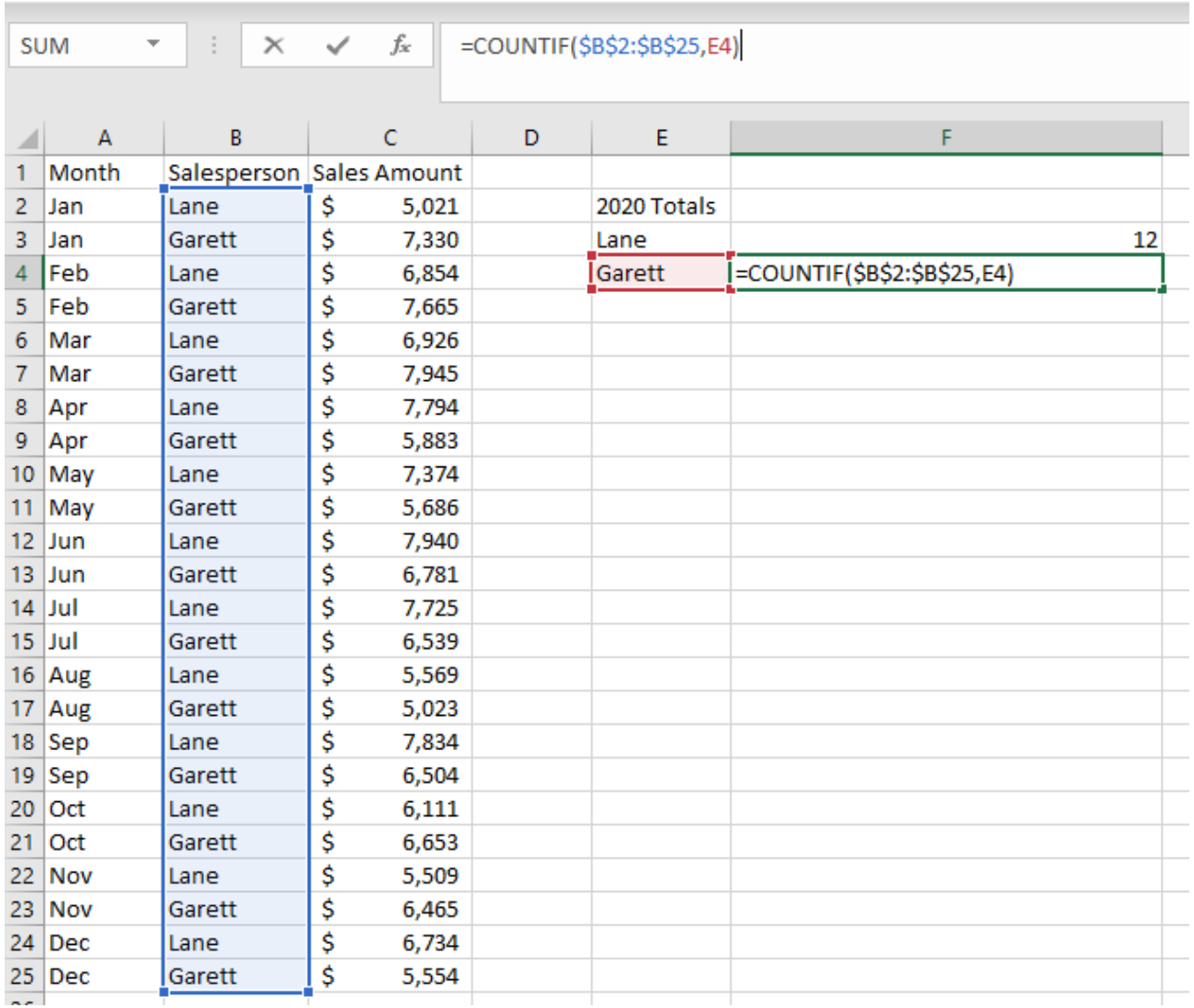
KANSAS STATE UNIVERSITY

COUNTIF Function

- Combines the COUNT and IF functions. You can count values or observations based on one criterion.
- Excel will look for the criterion based on row.

=COUNTIF(range,criteria)

→(Salesperson,{Name})

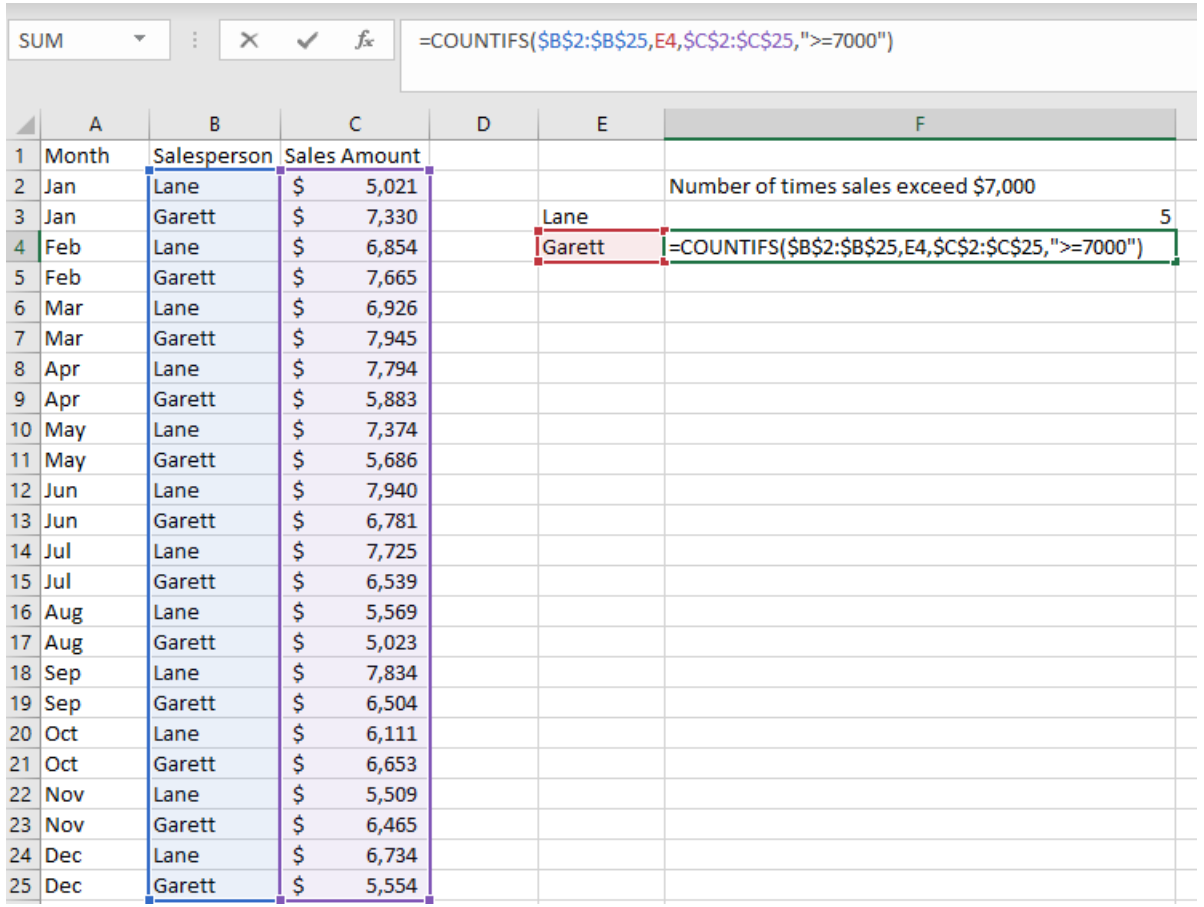


	A	B	C	D	E	F
1	Month	Salesperson	Sales Amount			
2	Jan	Lane	$ 5,021		2020 Totals	
3	Jan	Garett	$ 7,330		Lane	12
4	Feb	Lane	$ 6,854		Garett	=COUNTIF($B$2:$B$25,E4)
5	Feb	Garett	$ 7,665			
6	Mar	Lane	$ 6,926			
7	Mar	Garett	$ 7,945			
8	Apr	Lane	$ 7,794			
9	Apr	Garett	$ 5,883			
10	May	Lane	$ 7,374			
11	May	Garett	$ 5,686			
12	Jun	Lane	$ 7,940			
13	Jun	Garett	$ 6,781			
14	Jul	Lane	$ 7,725			
15	Jul	Garett	$ 6,539			
16	Aug	Lane	$ 5,569			
17	Aug	Garett	$ 5,023			
18	Sep	Lane	$ 7,834			
19	Sep	Garett	$ 6,504			
20	Oct	Lane	$ 6,111			
21	Oct	Garett	$ 6,653			
22	Nov	Lane	$ 5,509			
23	Nov	Garett	$ 6,465			
24	Dec	Lane	$ 6,734			
25	Dec	Garett	$ 5,554			

COUNTIFS Function

- Could count based on criteria.
- Could manually input a numerical criterion …

Or …. Use the join (&) operator. For example: “>=”&{CellReference}



	A	B	C	D	E	F
1	Month	Salesperson	Sales Amount			
2	Jan	Lane	$ 5,021			Number of times sales exceed $7,000
3	Jan	Garett	$ 7,330		Lane	5
4	Feb	Lane	$ 6,854		Garett	=COUNTIFS($B$2:$B$25,E4,$C$2:$C$25,">=7000")
5	Feb	Garett	$ 7,665			
6	Mar	Lane	$ 6,926			
7	Mar	Garett	$ 7,945			
8	Apr	Lane	$ 7,794			
9	Apr	Garett	$ 5,883			
10	May	Lane	$ 7,374			
11	May	Garett	$ 5,686			
12	Jun	Lane	$ 7,940			
13	Jun	Garett	$ 6,781			
14	Jul	Lane	$ 7,725			
15	Jul	Garett	$ 6,539			
16	Aug	Lane	$ 5,569			
17	Aug	Garett	$ 5,023			
18	Sep	Lane	$ 7,834			
19	Sep	Garett	$ 6,504			
20	Oct	Lane	$ 6,111			
21	Oct	Garett	$ 6,653			
22	Nov	Lane	$ 5,509			
23	Nov	Garett	$ 6,465			
24	Dec	Lane	$ 6,734			
25	Dec	Garett	$ 5,554			

=COUNTIF(criteria_range1,criteria1,[criteria_range2],[criteria2],…)

→(Salesperson,{Name},Sales Amount,{“>= 7,000})

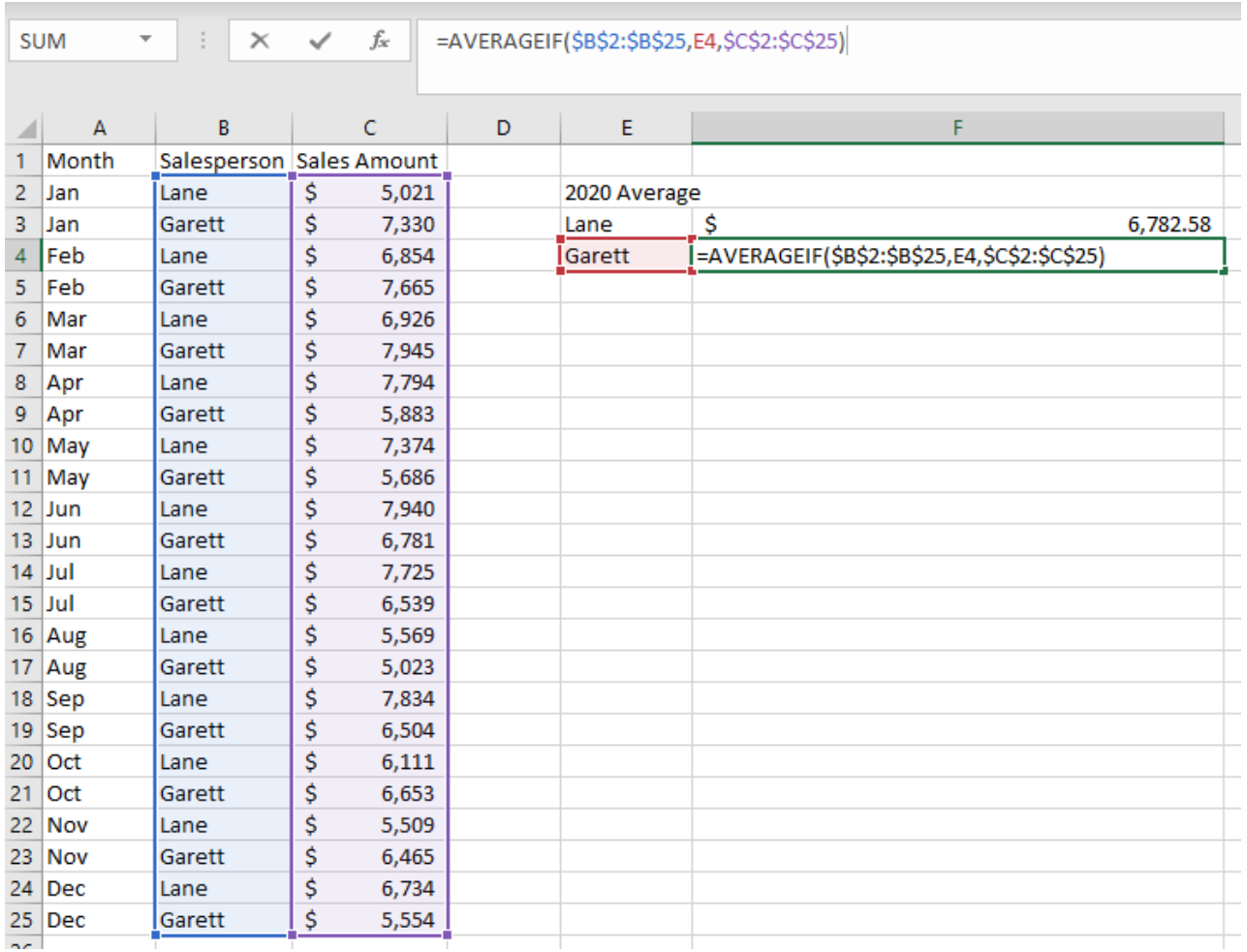
KANSAS STATE UNIVERSITY

AVERAGEIF Function

- Combines the AVERAGE and IF functions.
- Excel will look for the criterion based on row.

=AVERAGEIF(range,criteria,[average_range])

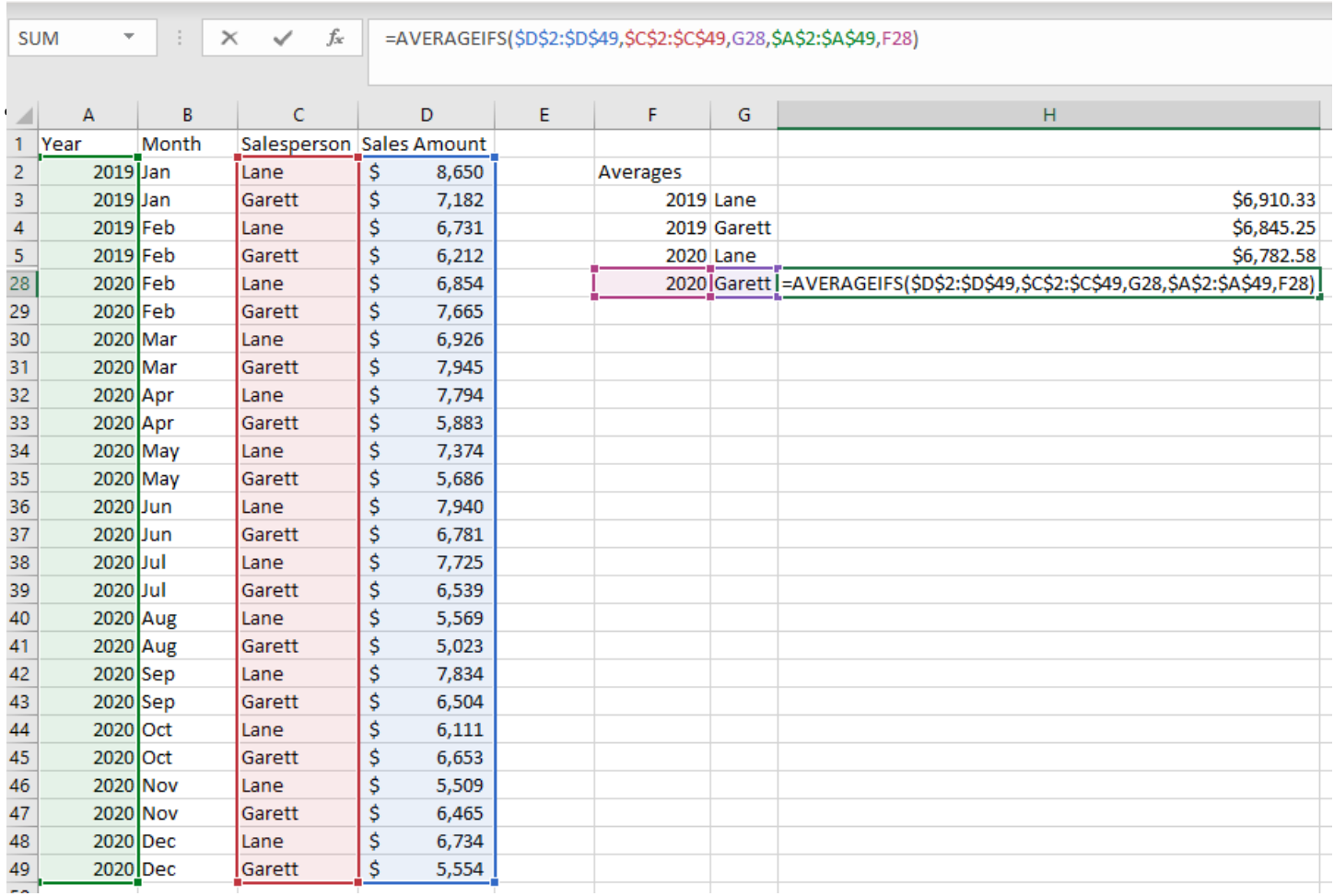
→(Salesperson,{Name},Sales Amount)



	A	B	C
1	Month	Salesperson	Sales Amount
2	Jan	Lane	$ 5,021
3	Jan	Garett	$ 7,330
4	Feb	Lane	$ 6,854
5	Feb	Garett	$ 7,665
6	Mar	Lane	$ 6,926
7	Mar	Garett	$ 7,945
8	Apr	Lane	$ 7,794
9	Apr	Garett	$ 5,883
10	May	Lane	$ 7,374
11	May	Garett	$ 5,686
12	Jun	Lane	$ 7,940
13	Jun	Garett	$ 6,781
14	Jul	Lane	$ 7,725
15	Jul	Garett	$ 6,539
16	Aug	Lane	$ 5,569
17	Aug	Garett	$ 5,023
18	Sep	Lane	$ 7,834
19	Sep	Garett	$ 6,504
20	Oct	Lane	$ 6,111
21	Oct	Garett	$ 6,653
22	Nov	Lane	$ 5,509
23	Nov	Garett	$ 6,465
24	Dec	Lane	$ 6,734
25	Dec	Garett	$ 5,554

AVERAGEIFS Function

- Could average based on criteria



SUM | =AVERAGEIFS($D$2:$D$49,$C$2:$C$49,G28,$A$2:$A$49,F28)

	A	B	C	D	E	F	G	H
1	Year	Month	Salesperson	Sales Amount				
2	2019	Jan	Lane	$ 8,650		Averages		
3	2019	Jan	Garett	$ 7,182		2019	Lane	$6,910.33
4	2019	Feb	Lane	$ 6,731		2019	Garett	$6,845.25
5	2019	Feb	Garett	$ 6,212		2020	Lane	$6,782.58
28	2020	Feb	Lane	$ 6,854		2020	Garett	=AVERAGEIFS($D$2:$D$49,$C$2:$C$49,G28,$A$2:$A$49,F28)
29	2020	Feb	Garett	$ 7,665				
30	2020	Mar	Lane	$ 6,926				
31	2020	Mar	Garett	$ 7,945				
32	2020	Apr	Lane	$ 7,794				
33	2020	Apr	Garett	$ 5,883				
34	2020	May	Lane	$ 7,374				
35	2020	May	Garett	$ 5,686				
36	2020	Jun	Lane	$ 7,940				
37	2020	Jun	Garett	$ 6,781				
38	2020	Jul	Lane	$ 7,725				
39	2020	Jul	Garett	$ 6,539				
40	2020	Aug	Lane	$ 5,569				
41	2020	Aug	Garett	$ 5,023				
42	2020	Sep	Lane	$ 7,834				
43	2020	Sep	Garett	$ 6,504				
44	2020	Oct	Lane	$ 6,111				
45	2020	Oct	Garett	$ 6,653				
46	2020	Nov	Lane	$ 5,509				
47	2020	Nov	Garett	$ 6,465				
48	2020	Dec	Lane	$ 6,734				
49	2020	Dec	Garett	$ 5,554				

=AVERAGEIFS(average_range,criteria_range1,criteria1,[criteria_range1],[criteria1],…)

→(Sales Amount,Salesperson,{Name},Year,{Year})

KANSAS STATE UNIVERSITY

AGEC 115: Decision Tools for Ag Economics and Agribusiness

2024

Manhattan, Kansas

KANSAS STATE UNIVERSITY | Agricultural Economics