



HAPPY BIRTHDAY

Chances that somebody has a birthday today: 66.601 %

365.25 All possible birthdays

Probability of a random person having a birthday today = $1/365.25$

Probability of a random person not having a birthday today = $364.25/365.25 = 0.997262$

Probability of n random people not having a birthday today : $(0.997262)^n$

Probability of 400 random people not having a birthday today = 33.399 %

So, Probability of at least one of 400 random people having a birthday today = $(100 - 33.399) \%$

=RAND()

returns a pseudo random value

$0 \leq \text{RAND} \leq 1$

We often need whole numbers.

= ROUND(RAND(),0) (Either 0 and 1)

=RANDBETWEEN(1,4)

gives a pseudo random value between 1 and 4

Always 1,2,3 or 4

Create Pivot table.

Carrier: Rows

values: ARR_DELAY

Instead of Count of ARR_DELAY, we can choose "Average" from the Value properties table

Choose: "Sort options" and choose descending/ ascending

Calculate likelihood of flights getting cancelled.

Options: -> Fields, Items and Sets -> Calculate field

=sum(CANCELLED)/SUM(Counter)

get cancellation Probability

Create a counter column. That is always 1. Count doesn't work the same way in pivot table as it does in spreadsheet. Use: Sum(counter)

Answer 1) How many carrier delay minutes did this aircraft accumulate?

STDEV.P															
=SUM(J3:J14)															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
1	Delays														
2	Day	Carrier	Tail	Origin	Destination		Dep	Arr	Carrier	Weather	ATC	Security	Aircraft		
3	26	B6	N179JB	DCA	Washington, DC	BOS	Boston, MA	1359	1523						
4	26	B6	N179JB	CLE	Cleveland, OH	BOS	Boston, MA	1850	2028						
5	26	B6	N179JB	BOS	Boston, MA	CLE	Cleveland, OH	1611	1804						
6	26	B6	N179JB	MCO	Orlando, FL	DCA	Washington, DC	1123	1323						
7	26	B6	N179JB	RIC	Richmond, VA	MCO	Orlando, FL	822	1010						
8	27	B6	N179JB	BOS	Boston, MA	DCA	Washington, DC	1731	1905	21	0	0	0	54	
9	27	B6	N179JB	DCA	Washington, DC	BOS	Boston, MA	1948	2122	13	0	1	0	69	
10	27	B6	N179JB	BOS	Boston, MA	BUF	Buffalo, NY	910	1042						
11	27	B6	N179JB	BUF	Buffalo, NY	BOS	Boston, MA	1142	1251						
12	27	B6	N179JB	ACK	Nantucket, MA	BOS	Boston, MA	1555	1640	0	0	0	23	41	
13	27	B6	N179JB	BOS	Boston, MA	ACK	Nantucket, MA	1412	1501	46	0	3	0	0	
14	27	B6	N179JB	BOS	Boston, MA	EWR	Newark, NJ	2151	2253	0	0	0	0	53	
15										=SUM(J3:J14)					
16															

=SUM(J3:J14)

Answer 2) Calculate the total delay minutes that occurred in Boston?

STDEV.P																			
=SUMIFS(O:O,D:D,"BOS")																			
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Delays																		
2	Day	Carrier	Tail	Origin	Destination		Dep	Arr	Carrier	Weather	ATC	Security	Aircraft	Total					
3	26	B6	N179JB	DCA	Washington, DC	BOS	Boston, MA	1359	1523						0				
4	26	B6	N179JB	CLE	Cleveland, OH	BOS	Boston, MA	1850	2028						0				
5	26	B6	N179JB	BOS	Boston, MA	CLE	Cleveland, OH	1611	1804						0				
6	26	B6	N179JB	MCO	Orlando, FL	DCA	Washington, DC	1123	1323						0				
7	26	B6	N179JB	RIC	Richmond, VA	MCO	Orlando, FL	822	1010						0				
8	27	B6	N179JB	BOS	Boston, MA	DCA	Washington, DC	1731	1905	21	0	0	0	54	75				
9	27	B6	N179JB	DCA	Washington, DC	BOS	Boston, MA	1948	2122	13	0	1	0	69	83				
10	27	B6	N179JB	BOS	Boston, MA	BUF	Buffalo, NY	910	1042						0				
11	27	B6	N179JB	BUF	Buffalo, NY	BOS	Boston, MA	1142	1251						0				
12	27	B6	N179JB	ACK	Nantucket, MA	BOS	Boston, MA	1555	1640	0	0	0	23	41	64				
13	27	B6	N179JB	BOS	Boston, MA	ACK	Nantucket, MA	1412	1501	46	0	3	0	0	49				
14	27	B6	N179JB	BOS	Boston, MA	EWR	Newark, NJ	2151	2253	0	0	0	0	53	53				
15																			

=SUMIFS(O:O, D:D, "BOS") or =SUMIFS(O:O, D:D, D8)

(177)

Answer 3) How many times did the plane leave Boston on time?

STDEV.P : ✕ ✓ fx =COUNTIFS(D3:D14,D5)

Day	Carrier	Tail	Origin	Destination	Dep	Arr	Delays					Aircraft	Total	
							Carrier	Weather	ATC	Security				
26	B6	N179JB	DCA	Washington, DC	BOS	Boston, MA	1359	1523						0
26	B6	N179JB	CLE	Cleveland, OH	BOS	Boston, MA	1850	2028						0
26	B6	N179JB	BOS	Boston, MA	CLE	Cleveland, OH	1611	1804						0
26	B6	N179JB	MCO	Orlando, FL	DCA	Washington, DC	1123	1323						0
26	B6	N179JB	RIC	Richmond, VA	MCO	Orlando, FL	822	1010						0
27	B6	N179JB	BOS	Boston, MA	DCA	Washington, DC	1731	1905	21	0	0	0	54	75
27	B6	N179JB	DCA	Washington, DC	BOS	Boston, MA	1948	2122	13	0	1	0	69	83
27	B6	N179JB	BOS	Boston, MA	BUF	Buffalo, NY	910	1042						0
27	B6	N179JB	BUF	Buffalo, NY	BOS	Boston, MA	1142	1251						0
27	B6	N179JB	ACK	Nantucket, MA	BOS	Boston, MA	1555	1640	0	0	0	23	41	64
27	B6	N179JB	BOS	Boston, MA	ACK	Nantucket, MA	1412	1501	46	0	3	0	0	49
27	B6	N179JB	BOS	Boston, MA	EWB	Newark, NJ	2151	2253	0	0	0	0	53	53

Q177
=COUNTIFS(D3:D14,D5)

=COUNTIFS(D3:D14,"BOS")

=COUNTIFS(D3:D14,D5)

(5)

Answer 4) What was the average delay experienced in Washington Reagan (DCA)?

STDEV.P : ✕ ✓ fx =AVERAGEIFS(O:O,D:D,"DCA")

Day	Carrier	Tail	Origin	Destination	Dep	Arr	Delays					Aircraft	Total	
							Carrier	Weather	ATC	Security				
26	B6	N179JB	DCA	Washington, DC	BOS	Boston, MA	1359	1523						0
26	B6	N179JB	CLE	Cleveland, OH	BOS	Boston, MA	1850	2028						0
26	B6	N179JB	BOS	Boston, MA	CLE	Cleveland, OH	1611	1804						0
26	B6	N179JB	MCO	Orlando, FL	DCA	Washington, DC	1123	1323						0
26	B6	N179JB	RIC	Richmond, VA	MCO	Orlando, FL	822	1010						0
27	B6	N179JB	BOS	Boston, MA	DCA	Washington, DC	1731	1905	21	0	0	0	54	75
27	B6	N179JB	DCA	Washington, DC	BOS	Boston, MA	1948	2122	13	0	1	0	69	83
27	B6	N179JB	BOS	Boston, MA	BUF	Buffalo, NY	910	1042						0
27	B6	N179JB	BUF	Buffalo, NY	BOS	Boston, MA	1142	1251						0
27	B6	N179JB	ACK	Nantucket, MA	BOS	Boston, MA	1555	1640	0	0	0	23	41	64
27	B6	N179JB	BOS	Boston, MA	ACK	Nantucket, MA	1412	1501	46	0	3	0	0	49
27	B6	N179JB	BOS	Boston, MA	EWB	Newark, NJ	2151	2253	0	0	0	0	53	53

Q177
Q5
=AVERAGEIFS(O:O,D:D,"DCA")

=AVERAGEIFS(O:O,D:D,"DCA")

(41.5)

Answer 5) Bag supposed to go to ACK.

Delays																	
Day	Carrier	Tail	Origin	Destination	Dep	Arr	Carrier	Weather	ATC	Security	Aircraft	Total					
26	B6	N179JB	DCA	Washington, DC	BOS	Boston, MA	1359	1523				0		177			
26	B6	N179JB	CLE	Cleveland, OH	BOS	Boston, MA	1850	2028				0		5			
26	B6	N179JB	BOS	Boston, MA	CLE	Cleveland, OH	1611	1804				0		41.5			
26	B6	N179JB	MCO	Orlando, FL	DCA	Washington, DC	1123	1323				0		=INDEX(G:G,(MATCH("ACK",F:F,0)))			
26	B6	N179JB	RIC	Richmond, VA	MCO	Orlando, FL	822	1010				0					
27	B6	N179JB	BOS	Boston, MA	DCA	Washington, DC	1731	1905	21	0	0	0	54	75			
27	B6	N179JB	DCA	Washington, DC	BOS	Boston, MA	1948	2122	13	0	1	0	69	83			
27	B6	N179JB	BOS	Boston, MA	BUF	Buffalo, NY	910	1042				0		0			
27	B6	N179JB	BUF	Buffalo, NY	BOS	Boston, MA	1142	1251				0		0			
27	B6	N179JB	ACK	Nantucket, MA	BOS	Boston, MA	1555	1640	0	0	0	23	41	64			
27	B6	N179JB	BOS	Boston, MA	ACK	Nantucket, MA	1412	1501	46	0	3	0	0	49			
27	B6	N179JB	BOS	Boston, MA	EWB	Newark, NJ	2151	2253	0	0	0	0	53	53			

=INDEX(G:G,(MATCH("ACK",F:F,0)))

(Nantucket, MA)

Answer 6) Consider the simple list of phone extensions on the right.

	A	B	C	D	E	F	G	H	I
1	Name	Extension							
2	Brandon	9862							
3	Joseph	2082		=INDEX(B:B,MATCH("Nicholas",A:A,FALSE))					
4	Graham	1731							
5	Kaolin	2017							
6	Nicholas	6967							
7	Carley	4729							
8	Mengxuan	7615							
9	Jessica	2602							

=INDEX(B:B,MATCH("Nicholas",A:A,FALSE))

Answer 7) You want to give a prize to a random person from the list. Write a formula to randomly return a name.

	A	B	C	D	E	F	G	H	I	J
1	Name	Extension								
2	Brandon	9862								
3	Joseph	2082		6967			=INDEX(A2:A9,RANDBETWEEN(2,9))			
4	Graham	1731								
5	Kaolin	2017								
6	Nicholas	6967								
7	Carley	4729								
8	Mengxuat	7615								
9	Jessica	2602								
10										

=INDEX(A2:A9,RANDBETWEEN(2,9))

Answer 8) Write a formula to create celcius value!

What's the temperature in F?	70
In Celcius that would be:	=(J3-32)/1.8

Answer 9)

What's the temperature in F?	35
In Celcius that would be:	1.666666667
	=IF(J4<0,"Brr, that is cold!",IF(J4<15,"A bit chilly today!",IF(J4<25,"Quite nice!","It is sure hot today!")))