ROUND DOWN

ROUNDING COASTER

ROUND UP

HOUNDREDS ROUNDING CHART

ROUND DOWN ⟵ | ROUND UP ⟶

0	1	2	3	4	5	6	7	8	9	10
10	11	12	13	14	15	16	17	18	19	20
20	21	22	23	24	25	26	27	28	29	30
30	31	32	33	34	35	36	37	28	39	40
40	41	42	43	44	45	46	47	48	49	50
50	51	52	53	54	55	56	57	58	59	60
60	61	62	63	64	65	66	67	68	69	70
70	71	72	73	74	75	76	77	78	79	80
80	81	82	83	84	85	86	87	88	89	90
90	91	92	93	94	95	96	97	98	99	100

ROUND DOWN ⟵ | ROUND UP ⟶

ROUND DOWN | ROUND UP

220 ⟵ 222
227 ⟶ 230
400 ⟵ 415
465 ⟶ 500
975 ⟶ 1000
8600 ⟵ 8645
8695 ⟶ 8700

LET'S TRY!
8695
8695
742
1493
2693
9823

≈ A WAVY EQUALS SIGN approximately equal to
Exsample: 9.98 ≈ 10.

THE GRACE OF NUMBERS

Grace gazed in wonder at the small alarm clock, its ticking sound, tick-tock, tick-tock, intrigued her.

"I wonder how it makes this noise?" she wondered. She picked up the alarm clock and brought it close to her ear: the noise grew louder, and she felt it deep in her heart.

"Let's see how it's made," she said to herself before starting to dismantle it to understand better the mechanisms and the perfect movement that made her happy. That curiosity and happiness never left her, even during her years of study at numerous educational institutions, including Vassar College, where she earned a degree in Mathematics and Physics.

Like every girl from a good family, Grace Hopper attended private girls' schools that imparted an education full of stereotypes, where women were primarily encouraged to learn how to cook, take care of children, be elegant, and engage in pleasant conversations. However, fortunately, even her father found many of these rules truly unnecessary and, instead, encouraged Grace to not only follow her curiosity but also to engage in sports such as basketball, field hockey, and water polo.

As an adult, Grace had retained a petite, almost childlike body that looked fragile but was, in fact, full of strength and great ability. After studying at the prestigious Yale University, where she first obtained a Master's Degree and then a PhD in Mathematics, she began her brilliant career as a university professor. However, those were very difficult years, the winds of war were blowing in Europe, and day after day, year after year, the situation became more and more difficult and complex, until the United States also entered the world conflict.

Grace Murray Hopper
(1906 – 1992) was an American mathematician and computer scientist who pioneered her field and was famous for having worked on the first commercial computer in history.

MY BOX OF STEAM

Grace, determined to make her own contribution, decided to enlist in the Navy in 1943. Her battle, however, was not fought with weapons but with numbers and words. Grace joined the programmer's squadron and immediately stood out for her skills and abilities.

"We think you are the right person, the only one who can make the monster talk!" So one day, somewhat fearful but mostly intrigued, she was led into the room of the big, noisy "Mark1" computer, one of the first computers in history. The big monster buzzed, mumbled and made much noise, but Grace was not scared at all, like the alarm clock she had taken apart when she was only seven years old she listened and realised what she had to do, teach the monster to "talk". In her years of teaching her students, in fact, she had taught them not just numbers but how to tell them: "It is useless to know if you cannot explain" she was fond of repeating. The words and numbers that Grace taught him were used to discover the secret codes that enemies exchanged.

When the war finally ended, Grace nevertheless did not abandon her studies and research, but continued by finding ever more creative solutions, creating the first true compiler. During her years of study, she had become fascinated by the writings of Ada Lovelace, felt close to that scientist and wanted to make her mark. Brilliant and visionary, she imagined a future in which everyone would have natural access to a computer, disproving all those who did not believe this was possible; the "Amazing Grace", as she was nicknamed, would stop at nothing.

A few years earlier, shortly after the end of the war, on a hot summer night while the "brother" of the first monster "Mark II" was spinning his wheels to learn the new data processed by Grace's team, a large moth flew in through the window left open. Perhaps startled by the deafening noise, the insect crawled into the computer's grille, blocking it. Grace gently pulled it out with tweezers. As she pasted the poor dead insect onto a notebook, she was reminded that Thomas Edison used the term "bug" to refer to a problem, a malfunction. Grace realised that real "bugs" could creep in and blow up calculations and that this required "debugging".

Rounding numerical calculations could also have been one of many solutions. With her studies and research, she contributed, albeit indirectly, to the definition of rules for mathematical rounding, so that calculations performed by computers would be as accurate as possible.