

Columbia College Math Day for Girls
Level I Mathematics Contest

1)	What is the value of $\sqrt{(-5)^2}$?						
[A]	-5	[B]	5	[C]	25	[D]	undefined
2)	Simplify the expression:	$\frac{\sqrt{9+16}}{\sqrt{9}+\sqrt{16}}$					
[F]	1	[G]	$\frac{5}{7}$	[H]	5	[J]	$\frac{7}{5}$
3)	Simplify the expression:	$\frac{1}{1+\frac{1}{2}} - \frac{1}{1-\frac{1}{2}}$					
[A]	2	[B]	1	[C]	0	[D]	$-1\frac{1}{3}$
4)	How many $\frac{2}{5}$ are there in 10?						
[F]	4	[G]	50	[H]	25	[J]	10.4
5)	Which does NOT represent the same number?						
[A]	5%	[B]	0.05	[C]	5	[D]	$\frac{1}{20}$
6)	34 is $\frac{1}{2}$ of what number?						
[F]	17	[G]	3.4	[H]	68	[J]	170
7)	Merchant A sells a coat for \$40.00 and Merchant B sells it for \$50.00. A tells B: "Your price is 25% higher than mine." Merchant B tells A: "Well, your price is just 20% less than mine." Who is right?						
[A]	Merchant A	[B]	Merchant B	[C]	Both	[D]	Neither

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8)	Which of the following cannot be the three sides of a triangle? [F] 3, 4, 5 [G] 2, 8, 8 [H] .3, .8, 1 [J] 3, 6, 9
9)	Alicia goes to school on her bike. She rides at a steady speed of 13 miles per hour. She leaves the house at 7:38 and must be at school at 7:55. She arrives at school 5 minutes early. The distance from her house to school is: [A] 0.38 miles [B] 1.08 miles [C] 2.6 miles [D] 3.68 miles
10)	Each edge of a square is increased by 10%. The percent increase in the area is: [F] 10% [G] 21% [H] 90% [J] 100%
11)	How many numbers from 1 to 100 contain the digit 5 exactly once? [A] 9 [B] 10 [C] 18 [D] 19
12)	An athlete plans to run 400 meters. She will run the first 200 meters at a speed of 10 meters per second, then run the next 200 meters at a speed of 5 meters per second. What will be her average speed for this run in meters per second? [A] 6.67 [B] 7.5 [C] 6.5 [D] 8.6
13)	What is the sum of the first 40 even positive integers? [A] 1135 [B] 1640 [C] 2025 [D] 2070
14)	In the last Olympics, the winner of the Marathon ran the 42 km in 2 hours and 10 minutes. What was his average speed in miles per hour? (1 mile = 1.6 km) [F] 12.1 mph [G] 12.5 mph [H] 19.38 mph [J] 31.02 mph
15)	A 10 foot ladder and a 5 foot ladder lean against a vertical wall. If both ladders make the same angle with the wall and the top of the 10-foot ladder is 8 ft high then the top of the 5-foot ladder is _____ high. [F] 4.5 ft. [G] 4 ft. [H] 3.5 ft. [J] 3 ft.