

5. Introduction to Percentages

Mathematical Definition: Percentage

A ratio $a:b = a/b$. When the second term is reduced to **1**, you get the unit ratio. When the second term is scaled to **100**, you get the percentage:

$$\text{Unit Ratio} = a \div b \rightarrow \text{Percentage} = (a \div b) \times 100 \%$$

a) Made 3 shots out of 5 attempts. How many in 25 attempts? 9 makes in how many attempts?

Makes	3	→	15	→	9
Attempts	5	→	25	→	15
Rate	0.6	→	0.6	→	0.6
Per 100	60	→	60	→	60
Percentage	60 %	→	60 %	→	60 %

b) Got 18 correct out of 20. How many correct in 100? 36 correct in how many total?

Correct	18	→		→	36
Total	20	→	100	→	
Rate	0.9	→	0.9	→	0.9
Per 100	90	→	90	→	90
Percentage	90 %	→	90 %	→	90 %

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c) Attended 23 days out of 25. How many in 100 days? 46 days in how many total?

Attended	23	→		→	46
Total Days	25	→	100	→	
Rate	0.92	→	0.92	→	0.92
Per 100	92	→	92	→	92
Percentage	92 %	→	92 %	→	92 %

d) 36 items passed out of 40. How many passed in 200? 72 passed in how many total?

Passed	36	→		→	72
Total Items	40	→	200	→	
Rate	0.9	→	0.9	→	0.9
Per 100	90	→	90	→	90
Percentage	90 %	→	90 %	→	90 %

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e) 17 trees survived out of 20. How many survive in 100? 34 survive in how many total?

Survived	17	→		→	34
Total Trees	20	→	100	→	
Rate	0.85	→	0.85	→	0.85
Per 100	85	→	85	→	85
Percentage	85 %	→	85 %	→	85 %

f) Hit 15 targets out of 20. How many hits in 100? 30 hits in how many total?

Hits	15	→		→	30
Total	20	→	100	→	
Rate	0.75	→	0.75	→	0.75
Per 100	75	→	75	→	75
Percentage	75 %	→	75 %	→	75 %