True or False?

Converting between Fractions, Decimals and Percentages

Question 1

The decimal 0.75 is equivalent to the fraction 3/4 and 75%

Answer: FALSE

Explanation: True. 0.75 as a fraction is 75/100 which simplifies to 3/4, and 0.75 × 100 = 75%, so all three representations are equivalent.

Question 2

To convert a fraction to a percentage, you always multiply the fraction by 100

Answer: FALSE

Explanation: True. Converting a fraction to a percentage involves multiplying the fraction by 100 and adding the percent symbol, since percentage means 'per hundred'.

Question 3

The decimal 0.125 is equivalent to 12.5% and 1/8

Answer: FALSE

Explanation: True. 0.125 × 100 = 12.5%, and 0.125 as a fraction is 125/1000 which simplifies to 1/8.

Question 4

When converting 2/3 to a decimal, it results in a terminating decimal

Answer: FALSE

Explanation: False. 2/3 = 0.666... which is a repeating decimal, not a terminating decimal.

Question 5

125% is equivalent to the decimal 1.25 and the fraction 5/4

Answer: FALSE

Explanation: True. 125% = 125/100 = 1.25 as a decimal, and 125/100 simplifies to 5/4.

Question 6

The fraction 7/8 is greater than 0.875 when converted to decimal

Answer: FALSE

Explanation: False. 7/8 = 0.875 exactly, so they are equal, not greater than.

Question 7

To convert a percentage to a decimal, you divide by 100 and remove the percent sign

Answer: FALSE

Explanation: True. For example, 45% = 45 ÷ 100 = 0.45 as a decimal.

Question 8

The decimal 0.6 repeating is equivalent to 2/3 and 66.7% (rounded to one decimal place)

Answer: FALSE

Explanation: True. 0.666... = 2/3, and 2/3 × 100 = 66.666...% which rounds to 66.7% to one decimal place.

Question 9

All fractions can be converted to terminating decimals

Answer: FALSE

Explanation: False. Only fractions whose denominators have prime factors of 2 and/or 5 will result in terminating decimals. Fractions like 1/3, 2/7, etc., result in repeating decimals.

Question 10

0.04 is equivalent to 4% and 1/25

Answer: FALSE

Explanation: True. 0.04 × 100 = 4%, and 0.04 as a fraction is 4/100 which simplifies to 1/25.

Question 11

When converting a mixed number to a percentage, you only convert the fractional part

Answer: FALSE

Explanation: False. You must convert the entire mixed number. For example, 2 1/4 = 2.25 = 225%, not just converting 1/4 to 25%.

Question 12

The fraction 5/6 is approximately 83.3% when rounded to one decimal place

Answer: FALSE

Explanation: True. 5/6 = 0.8333..., which × 100 = 83.333...%, rounding to 83.3% to one decimal place.

Question 13

0.9 repeating is equal to 1

Answer: FALSE

Explanation: True. 0.999... (repeating) is mathematically equal to 1. This can be shown algebraically or through geometric series.

Question 14

To convert 0.375 to a fraction, you would write 375/1000 and simplify to 3/8

Answer: FALSE

Explanation: True. 0.375 = 375/1000, and dividing numerator and denominator by 125 gives 3/8.

Question 15

150% is equivalent to the decimal 0.15

Answer: FALSE

Explanation: False. 150% = 150/100 = 1.5, not 0.15. This is a common misconception where students incorrectly move the decimal point.

Question 16

The fraction 4/5 is equivalent to 80% and 0.8

Answer: FALSE

Explanation: True. 4/5 = 0.8, and 0.8 × 100 = 80%.

Question 17

When converting a decimal to a percentage, you always move the decimal point two places to the left

Answer: FALSE

Explanation: False. You move the decimal point two places to the right when converting from decimal to percentage. Moving left would convert percentage to decimal.

Question 18

The decimal 0.002 is equivalent to 0.2% and 1/500

Answer: FALSE

Explanation: True. 0.002 × 100 = 0.2%, and 0.002 = 2/1000 = 1/500.

Question 19

All percentages can be written as fractions with denominator 100

Answer: FALSE

Explanation: True. By definition, percentage means 'per hundred', so any percentage can be written as a fraction with denominator 100, though it may be simplified.

Question 20

The fraction 3/10 is greater than 30% when comparing values

Answer: FALSE

Explanation: False. 3/10 = 0.3 = 30%, so they are equal in value, not greater than.