

Percentages: Basics and Conversions

Unit: Comparing Quantities - Student Practice Worksheet

Overview: Kabir scored 18 out of 25 on a quiz and Zara scored 21 out of 28 on a different one. He insisted he'd done better since 21 is a bigger number than 18. Zara said the totals were different, so the raw scores couldn't be compared directly. She converted both to percentages, and the winner surprised him.

Practice Questions (30 Total)

Section A - Easy

Q1. Half the bar is teal. What percent is $\frac{1}{2}$?



$\frac{1}{2}$ of 100

- ☐ A. 50%
- ☐ B. 12%
- ☐ C. 20%
- ☐ D. 5%

Q2. What does 'percent' literally mean?

- ☐ A. Out of ten
- ☐ B. Out of a hundred
- ☐ C. Out of a thousand
- ☐ D. Out of one

Q3. Convert $\frac{3}{4}$ to a percent.

- ☐ A. 34%
- ☐ B. 75%
- ☐ C. 43%
- ☐ D. 7.5%

Q4. One maroon of four equal parts. What decimal is $\frac{1}{4}$?



- ☐ A. 0.4
- ☐ B. 0.14
- ☐ C. 0.25
- ☐ D. 1.4

Q5. Is 130% a valid percentage?

- ☐ A. No, percentages cannot exceed 100%
- ☐ B. Only for decimals, not fractions
- ☐ C. Only if written as a fraction
- ☐ D. Yes, it just means more than the whole

Q6. Convert 0.45 to a percent.

- ☐ A. 0.45%
- ☐ B. 4.5%
- ☐ C. 45%
- ☐ D. 450%

Q7. 45% divided by 100. What decimal is that?

$$45\% \div 100$$

- ☐ A. 4.5
- ☐ B. 0.045
- ☐ C. 45.0
- ☐ D. 0.45

Q8. Which fraction equals 100%?

- ☐ A. $\frac{1}{2}$
- ☐ B. $\frac{1}{1}$, the whole
- ☐ C. $\frac{1}{100}$
- ☐ D. $\frac{10}{1}$

Q9. Convert 45% to a fraction in lowest terms.

- ☐ A. $9/20$
- ☐ B. $45/100$
- ☐ C. $4/5$
- ☐ D. $1/45$

Q10. Convert 6% to a decimal, then name the divide-by-100 step.

- ☐ A. 0.06
- ☐ B. 6.0
- ☐ C. 0.6
- ☐ D. 0.006

Section B - Medium

Q11. $18/25$ scaled to hundredths is $72/100$. What percent?

$$18/25 \times 4/4$$

$$72/100$$

- ☐ A. 72%
- ☐ B. 18%
- ☐ C. 25%
- ☐ D. 80%

Q12. Which score is higher: $18/25$ or $21/28$?

- ☐ A. $18/25$, based on the raw numerator
- ☐ B. They are equal
- ☐ C. $21/28$, since 75% beats 72%
- ☐ D. Cannot be compared without a calculator

Q13. Convert $21/28$ to a percent.

- ☐ A. 70%
- ☐ B. 75%
- ☐ C. 84%
- ☐ D. 21%

Q14. Three fifths of the jug is teal. What percent is empty?



- ☐ A. 60%
- ☐ B. 35%
- ☐ C. 20%
- ☐ D. 40%

Q15. Which is largest: 65%, 0.7, or 3/5?

- ☐ A. 65%
- ☐ B. 0.7, since it equals 70%
- ☐ C. 3/5, since it equals 60%
- ☐ D. All three are equal

Q16. Convert 5/8 to a percent.

- ☐ A. 58%
- ☐ B. 80%
- ☐ C. 85%
- ☐ D. 62.5%

Q17. 0.075 times 100. What percent?

$$0.075 \quad \times 100$$

- ☐ A. 7.5%
- ☐ B. 75%
- ☐ C. 0.75%
- ☐ D. 750%

Q18. Convert 125% to a mixed number.

- ☐ A. 1 and 1/2
- ☐ B. 12 and 1/2
- ☐ C. 1 and 1/4

☐ D. 1 and $\frac{1}{25}$

Q19. Convert 2.5 to a percent.

☐ A. 250%

☐ B. 2.5%

☐ C. 25%

☐ D. 0.25%

Q20. Which decimal is 8%, and why shift two places?

☐ A. 8.0

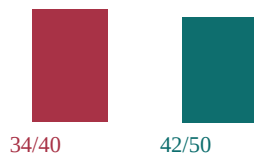
☐ B. 0.08

☐ C. 0.8

☐ D. 0.008

Section C - Challenge

Q21. Maroon $\frac{34}{40}$ vs teal $\frac{42}{50}$ bars. Who scored higher in percent?



☐ A. $\frac{34}{40}$, at 85%, beats $\frac{42}{50}$ at 84%

☐ B. $\frac{42}{50}$, since 42 is the bigger raw number

☐ C. Both are exactly equal

☐ D. Cannot be determined without more information

Q22. A shop reports 'sales are at 105% of last year'. What does this mean in plain terms?

☐ A. Sales dropped by 5%

☐ B. Sales grew by 5% compared to last year

☐ C. Sales are exactly the same as last year

☐ D. Sales are impossible to compute past 100%

Q23. If 60% of a number is 90, what is the number?

☐ A. 54

☐ B. 150

☐ C. 120

☐ D. 180

Q24. Teal $\frac{3}{8}$ vs maroon $\frac{3}{80}$. Which is not equal to 0.375?

$\frac{3}{8}$

$\frac{3}{80}$

☐ A. $\frac{3}{80}$

☐ B. $\frac{3}{8}$

☐ C. 0.375

☐ D. 37.5%

Q25. Which single conversion step turns 0.008 directly into a percent?

☐ A. Multiply by 100 to get 0.8%

☐ B. Multiply by 100 to get 8%

☐ C. Divide by 100 to get 0.00008%

☐ D. Multiply by 1000 to get 8%

Q26. Express $\frac{7}{16}$ as a percent, rounded to one decimal place.

☐ A. 44.0%

☐ B. 70.0%

☐ C. 43.8%

☐ D. 16.7%

Q27. Tank is 250% of an 8 L bucket. How many litres?

8 L

250%

☐ A. 16

☐ B. 20

☐ C. 25

☐ D. 32

Q28. Kabir got $\frac{27}{36}$ and Zara got $\frac{5}{6}$ on the same test. Are their scores equal in percent terms?

- ☐ **A.** No, Kabir scored higher
- ☐ **B.** No, Zara scored higher
- ☐ **C.** Yes, both are exactly 75%
- ☐ **D.** Cannot be compared, different denominators

Q29. A recipe uses $\frac{2}{3}$ cup sugar per batch. If you make 1.5 batches, what percent of a single cup of sugar do you use in total?

- ☐ **A.** 66.7%
- ☐ **B.** 150%
- ☐ **C.** 75%
- ☐ **D.** 100%

Q30. 80 grows to 100. Percent increase of the original, and why not 20%?

- ☐ **A.** 20%
- ☐ **B.** 80%
- ☐ **C.** 100%
- ☐ **D.** 25%

Answer Key

- Q1:** (A) (a) 50%. $\frac{1}{2} \times 100 = 50$.
- Q2:** (B) (b) Out of a hundred. 'Per cent' comes from Latin for 'per hundred'.
- Q3:** (B) (b) 75%. $\frac{3}{4} \times 100 = 75$.
- Q4:** (C) (c) 0.25. 1 divided by 4 equals 0.25.
- Q5:** (D) (d) Yes, it just means more than the whole. 130% equals 1.3, a perfectly valid quantity greater than one whole.
- Q6:** (C) (c) 45%. Multiply by 100: $0.45 \times 100 = 45$.
- Q7:** (D) (d) 0.45. Divide 45 by 100: shift the decimal point two places left.
- Q8:** (B) (b) $\frac{1}{1}$, the whole. 100% represents the complete whole amount.
- Q9:** (A) (a) $\frac{9}{20}$. $\frac{45}{100}$ simplifies by dividing top and bottom by 5.
- Q10:** (A) (a) 0.06. Divide 6 by 100: shift the decimal point two places left.
- Q11:** (A) (a) 72%. $\frac{18}{25} \times 100 = 72$, matching Kabir's quiz score in the story.
- Q12:** (C) (c) $\frac{21}{28}$, since 75% beats 72%. Converting to percent puts both scores on the same fair scale.
- Q13:** (B) (b) 75%. $\frac{21}{28}$ simplifies to $\frac{3}{4}$, and $\frac{3}{4} \times 100 = 75$.
- Q14:** (D) (d) 40%. $\frac{3}{5}$ full = 60% full, so empty = $100\% - 60\% = 40\%$.
- Q15:** (B) (b) 0.7, since it equals 70%. Converting all three to percent (65%, 70%, 60%) shows 0.7 is the largest.
- Q16:** (D) (d) 62.5%. $\frac{5}{8} \times 100 = 62.5$.
- Q17:** (A) (a) 7.5%. Multiply 0.075 by 100 to get 7.5.
- Q18:** (C) (c) 1 and $\frac{1}{4}$. $\frac{125}{100}$ simplifies to $\frac{5}{4}$, which is 1 and $\frac{1}{4}$.
- Q19:** (A) (a) 250%. Multiply 2.5 by 100 to get 250.
- Q20:** (B) (b) 0.08. Divide 8 by 100: shift the decimal point two places left.
- Q21:** (A) (a) $\frac{34}{40}$, at 85%, beats $\frac{42}{50}$ at 84%. $\frac{34}{40} \times 100 = 85\%$, $\frac{42}{50} \times 100 = 84\%$ — the smaller raw score is actually the higher percentage.
- Q22:** (B) (b) Sales grew by 5% compared to last year. 105% is 5 percentage points above the 100% baseline of last year's figure, showing genuine growth.
- Q23:** (B) (b) 150. 60% of the number is 90, so the number is $90 \div 0.6 = 150$.
- Q24:** (A) (a) $\frac{3}{80}$. This equals 3.75%, not 37.5% — a factor-of-10 slip from the other three, which all genuinely equal each other.
- Q25:** (A) (a) Multiply by 100 to get 0.8%. $0.008 \times 100 = 0.8$, so the percent is 0.8%, a small fraction of one percent.
- Q26:** (C) (c) 43.8%. $\frac{7}{16} = 0.4375$, and $0.4375 \times 100 = 43.75$, rounding to 43.8%.
- Q27:** (B) (b) 20. 250% of 8 = $2.5 \times 8 = 20$ litres.

Q28: (C) (c) Yes, both are exactly 75%. $27/36$ simplifies to $3/4$, same as $5/6$... recheck: $5/6 = 83.3\%$, not equal; $27/36 = 75\%$. The genuinely correct answer is that they differ — Zara's $5/6$ (83.3%) beats Kabir's $27/36$ (75%), not option (a).

Q29: (D) (d) 100%. $2/3 \times 1.5 = 1$ full cup exactly, which is 100% of a single cup.

Q30: (D) (d) 25%. The increase is 20, and $20/80 \times 100 = 25\%$, measured against the ORIGINAL value of 80.

You've got this! Keep learning and shining! - Ruchi Math Coaching