Decimal Place Value

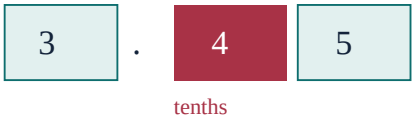
Unit: Fractions and Decimals - Student Practice Worksheet

Overview: Kabir wrote 3.4 and 3.40 and insisted they were different numbers, since one had an extra zero. Anaya lined up their place values, column by column, tenths under tenths and hundredths under hundredths. The extra zero turned out to change absolutely nothing about the number's actual value.

Practice Questions (30 Total)

Section A - Easy

Q1. Maroon box is the first digit after the point in 3.45. Which digit?



- ☐ **A.** 3
- ☐ **B.** 4
- ☐ **C.** 5
- ☐ **D.** 0

Q2. What is the tenths place worth?

- ☐ **A.** 1/10
- ☐ **B.** 1/100
- ☐ **C.** 1/1000
- ☐ **D.** 10

Q3. In 3.45, what digit is in the hundredths place?

- ☐ **A.** 4
- ☐ **B.** 3
- ☐ **C.** 5
- ☐ **D.** 0

Q4. Three bars: 3, 4/10, 5/100. What decimal sum is that?

3	4/10	5/100

- [ ] **A.** 3 + 45/10
- [ ] **B.** 3 + 4/100 + 5/10
- [ ] **C.** 34 + 5/100
- [ ] **D.** 3 + 4/10 + 5/100

Q5. Are 3.4 and 3.40 the same value?

- [ ] **A.** No, different
- [ ] **B.** Only sometimes
- [ ] **C.** Cannot be checked
- [ ] **D.** Yes, same value

Q6. Which is bigger: 3.4 or 3.45?

- [ ] **A.** 3.4
- [ ] **B.** 3.45
- [ ] **C.** They are equal
- [ ] **D.** Cannot be compared

Q7. The last digit of 7.205 is marked thousandths. Which digit is it?

7 . 2 0 5

thousandths is maroon 5

- [ ] **A.** 5
- [ ] **B.** 2
- [ ] **C.** 0
- [ ] **D.** 7

Q8. What is the hundredths place worth?

- [ ] **A.** 1/100
- [ ] **B.** 1/10
- [ ] **C.** 100
- [ ] **D.** 1/1000

Q9. What is the thousandths place worth?

- [ ] **A.** 1/100
- [ ] **B.** 1/10
- [ ] **C.** 1/1000
- [ ] **D.** 1000

Q10. Are 6.5 and 6.50 the same, and why does the extra zero not add value?

- [ ] **A.** No
- [ ] **B.** Yes
- [ ] **C.** Only for whole numbers
- [ ] **D.** Cannot be checked

Section B - Medium

Q11. Maroon 6.50 sits right of teal 6.45. Which is bigger?

- [ ] **A.** 6.5 is bigger
- [ ] **B.** 6.45 is bigger
- [ ] **C.** They are equal
- [ ] **D.** Cannot be compared

Q12. Kabir thinks 3.9 is smaller than 3.15 because 9 looks smaller than 15. Is he right?

- [ ] **A.** Yes, he is correct
- [ ] **B.** They are equal
- [ ] **C.** Cannot be determined
- [ ] **D.** No, 3.9 is actually bigger

Q13. Write 5.207 as a sum of its place values.

- [ ] **A.** 5 + 207/10
- [ ] **B.** 5 + 2/10 + 0/100 + 7/1000
- [ ] **C.** 5 + 2/100 + 0/10 + 7/1000
- [ ] **D.** 52 + 7/1000

Q14. Bars 2, 3/10, 6/100 stacked. What decimal is that?

- [ ] **A.** 2.36
- [ ] **B.** 2.63
- [ ] **C.** 23.6
- [ ] **D.** 2.306

Q15. Why does writing 4.5 as 4.50 not change its value?

- [ ] **A.** It actually does change the value
- [ ] **B.** The added zero in hundredths represents zero extra hundredths
- [ ] **C.** Only tenths places can have trailing zeros
- [ ] **D.** It changes the value only for whole numbers

Q16. Which is bigger: 0.9 or 0.89?

- [ ] **A.** 0.89
- [ ] **B.** They are equal
- [ ] **C.** 0.9
- [ ] **D.** Cannot be compared

Q17. Place boxes 1 . 0 4 with maroon hundredths. What decimal?

- [ ] **A.** 1.4
- [ ] **B.** 1.40
- [ ] **C.** 1.004
- [ ] **D.** 1.04

Q18. Compare 4.08 and 4.8.

- [ ] **A.** 4.08 is bigger
- [ ] **B.** They are equal
- [ ] **C.** 4.8 is bigger

- [ ] **D.** Cannot be compared

Q19. Remove the unnecessary trailing zeros from 8.500.

- [ ] **A.** 85
- [ ] **B.** 8.5
- [ ] **C.** 8.05
- [ ] **D.** 8.50

Q20. Order 2.5, 2.05, 2.55, lining up the decimal points.

- [ ] **A.** 2.05, 2.5, 2.55
- [ ] **B.** 2.5, 2.05, 2.55
- [ ] **C.** 2.55, 2.5, 2.05
- [ ] **D.** 2.05, 2.55, 2.5

Section C - Challenge

Q21. Three dots on a line: 7.099, 7.1, 7.11. Smallest to biggest?

- [ ] **A.** 7.1, 7.099, 7.11
- [ ] **B.** 7.11, 7.1, 7.099
- [ ] **C.** 7.099, 7.11, 7.1
- [ ] **D.** 7.099, 7.1, 7.11

Q22. Why can't you compare 3.4 and 3.09 by just comparing '4' and '09' as if they were whole numbers?

- [ ] **A.** The digits represent different place values (tenths vs hundredths) unless the columns are aligned
- [ ] **B.** You actually can compare them that way
- [ ] **C.** Decimal comparison rules don't apply to numbers under 10
- [ ] **D.** 3.09 is always bigger regardless of digits

Q23. A number has MORE decimal digits than another. Does it have to be bigger?

- [ ] **A.** Yes, always
- [ ] **B.** Only for numbers under 1

- [ ] **C.** No, 0.5 beats 0.49 with fewer digits
- [ ] **D.** Only if the first digit matches

Q24. Boxes 3 . 0 0 5. Why must the middle zeros stay?

- [ ] **A.** 3.5, since zeros can always be dropped anywhere
- [ ] **B.** 35, treating the fraction as a whole number
- [ ] **C.** 3.005 — the zeros are needed to hold tenths and hundredths places correctly
- [ ] **D.** 3.5000, adding extra zeros instead

Q25. Each decimal place is worth exactly 1/10 of the place to its LEFT. Why does this pattern make sense?

- [ ] **A.** It's a completely separate, unrelated system
- [ ] **B.** It continues the same base-10 place-value system whole numbers already use, just shrinking past the decimal point
- [ ] **C.** The pattern only applies to the tenths place
- [ ] **D.** Each place is actually worth 1/2 of the one to its left

Q26. Order 0.3, 0.30, and 0.303 from smallest to biggest.

- [ ] **A.** 0.303, then 0.3, then 0.30
- [ ] **B.** 0.3 and 0.30 are equal and both smaller than 0.303
- [ ] **C.** 0.3, then 0.303, then 0.30
- [ ] **D.** All three are exactly equal

Q27. A maroon line aligns the decimal points of 3.40 and 3.09. Why line them up?

- [ ] **A.** It has no real mathematical purpose
- [ ] **B.** It ensures each column truly represents the same place value across both numbers
- [ ] **C.** Only needed when the numbers have equal digit counts
- [ ] **D.** It only matters for numbers bigger than 100

Q28. Anaya says a leading zero (like the 0 in 0.5) works differently from a trailing zero. Is this true?

- A. Yes, a leading zero is required, unlike a trailing one
- B. No, both types of zero can always be removed freely
- C. Leading zeros are always meaningless
- D. Trailing zeros are always required, never removable

Q29. Kabir claims 2.10 has 'more value' than 2.1 because it has an extra digit. What's the flaw in this reasoning?

- A. There is no flaw, he is completely correct
- B. 2.10 is actually smaller than 2.1
- C. Trailing zeros always add exactly 0.01
- D. More written digits doesn't mean more value; the extra digit here is a value-neutral trailing zero

Q30. Why can any power-of-10 fraction be a decimal, place by place?

- A. Each decimal place directly represents a specific power-of-10 fraction (tenths, hundredths, etc.)
- B. It's not actually possible for most such fractions
- C. Only fractions with denominator 10 can become decimals
- D. Decimal places represent random, unrelated fractions

Answer Key

Q1: (B) (b) 4. The first digit after the decimal point.

Q2: (A) (a) 1/10.

Q3: (C) (c) 5. The second digit after the decimal point.

Q4: (D) (d) 3 + 4/10 + 5/100.

Q5: (D) (d) Yes, trailing zeros don't change value.

Q6: (B) (b) 3.45. Same tenths digit, but 3.45 has 5 in hundredths versus 0.

Q7: (A) (a) 5. The third digit after the decimal point.

Q8: (A) (a) 1/100.

Q9: (C) (c) 1/1000.

Q10: (B) (b) Yes, adding a trailing zero doesn't change the value.

Q11: (A) (a) 6.5 is bigger. Lined up: 6.50 vs 6.45 — 50 hundredths beats 45 hundredths.

Q12: (D) (d) No, 3.9 is actually bigger once columns are lined up: 3.90 vs 3.15 — 90 hundredths beats 15 hundredths.

Q13: (B) (b) 5 + 2/10 + 0/100 + 7/1000.

Q14: (A) (a) 2.36. 3 in tenths, 6 in hundredths.

Q15: (B) (b) The added zero in hundredths represents zero extra hundredths, adding nothing to the total value.

Q16: (C) (c) 0.9. Lined up: 0.90 vs 0.89 — 90 hundredths beats 89 hundredths.

Q17: (D) (d) 1.04. The zero in tenths must still be written to hold the place.

Q18: (C) (c) 4.8 is bigger. Lined up: 4.80 vs 4.08 — 80 hundredths beats 8 hundredths.

Q19: (B) (b) 8.5. Both trailing zeros can be dropped without changing the value.

Q20: (A) (a) 2.05, 2.5, 2.55. Lined up as 2.05, 2.50, 2.55, the order by hundredths is 05, 50, 55.

Q21: (D) (d) 7.099, 7.1, 7.11. Aligned to thousandths: 7.099, 7.100, 7.110 — the order follows directly.

Q22: (A) (a) The digits represent different place values (tenths vs hundredths) unless the columns are aligned, so raw digit comparison without alignment gives wrong answers.

Q23: (C) (c) No — 0.5 has fewer digits than 0.49 but is still bigger, since 0.50 beats 0.49 in the hundredths column.

Q24: (C) (c) 3.005 — the zeros are needed to hold tenths and hundredths places correctly; only TRAILING zeros after the last nonzero digit are ever droppable.

Q25: (B) (b) It continues the same base-10 place-value system whole numbers already use, just shrinking past the decimal point, keeping the whole number system internally consistent.

Q26: (B) (b) 0.3 and 0.30 are equal and both smaller than 0.303. 0.3=0.300 which is less than 0.303, since 303 thousandths beats 300 thousandths.

Q27: (B) (b) It ensures each column truly represents the same place value across both numbers, the same reason whole-number columns must be right-aligned before adding.

Q28: (A) (a) Yes — a leading zero before the decimal point is required to show there's no whole-number part, unlike a removable trailing zero after the decimal digits.

Q29: (D) (d) More written digits doesn't mean more value; the extra digit here is a value-neutral trailing zero, since 2.10 and 2.1 represent the exact same amount.

Q30: (A) (a) Each decimal place directly represents a specific power-of-10 fraction (tenths, hundredths, etc.), so any fraction already expressed over a power of 10 maps straight onto decimal digits.

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