

Fractions on the Number Line

Unit: Fractions and Decimals - Student Practice Worksheet

Overview: Anaya marked $\frac{3}{4}$ on a number line by splitting the segment from 0 to 1 into quarters and counting three steps. Kabir marked the same fraction by splitting the segment from 0 to 1 into eighths and counting six steps. Different number of steps, different-looking grids — yet both pencils landed on the exact same point.

Practice Questions (30 Total)

Section A - Easy

Q1. The line is split into 4 equal parts. The maroon mark is which of $\frac{3}{4}$?



- ☐ A. At the 1st mark
- ☐ B. At the 3rd mark
- ☐ C. At the 2nd mark
- ☐ D. At the 4th mark

Q2. Do $\frac{3}{4}$ and $\frac{6}{8}$ land on the same point on a number line?

- ☐ A. No, they sit apart
- ☐ B. Only in some cases
- ☐ C. Yes, same location
- ☐ D. Only on twelfths

Q3. What does the numerator of a fraction tell you when marking a number line?

- ☐ A. How many parts the whole is split into
- ☐ B. How many parts to count from 0
- ☐ C. The exact length of the number line
- ☐ D. Nothing useful

Q4. Five equal ticks from 0 to 1. Where is the maroon $\frac{0}{5}$ mark?



- ☐ A. On 1
- ☐ B. Past 1
- ☐ C. Halfway
- ☐ D. On 0

Q5. Where does $3/3$ land on a number line?

- ☐ A. Before 0
- ☐ B. Halfway to 1
- ☐ C. Past 1
- ☐ D. Exactly on 1

Q6. Is $5/4$ greater than or less than 1?

- ☐ A. Greater than 1
- ☐ B. Less than 1
- ☐ C. Equal to 1
- ☐ D. Cannot be determined

Q7. The bar from 0 to 1 is cut into these equal pieces. What did the denominator decide?



four equal bars from 0 to 1

- ☐ A. How many steps to count
- ☐ B. The color of the mark
- ☐ C. How many parts to split the whole
- ☐ D. Nothing useful

Q8. A fraction has numerator greater than its denominator. What kind of fraction is it?

- ☐ A. An improper fraction
- ☐ B. A proper fraction
- ☐ C. A whole number only
- ☐ D. A negative fraction

Q9. To mark $\frac{1}{4}$ on a number line, into how many equal parts should you split the segment from 0 to 1?

- ☐ A. 4
- ☐ B. 1
- ☐ C. 3
- ☐ D. 2

Q10. Both grids mark $\frac{3}{4}$ and $\frac{6}{8}$. Who was correct, and why do the points match?

- ☐ A. Only Anaya's
- ☐ B. Both, since they marked the same point
- ☐ C. Only Kabir's
- ☐ D. Neither was correct

Section B - Medium

Q11. Six equal parts from 0 to 1. The maroon tick is which mark for $\frac{5}{6}$?



- ☐ A. At the 4th mark
- ☐ B. At the 5th mark
- ☐ C. At the 6th mark
- ☐ D. Past the 6th mark

Q12. Which fraction is equivalent to $\frac{2}{3}$?

- ☐ A. $\frac{4}{6}$
- ☐ B. $\frac{3}{4}$
- ☐ C. $\frac{2}{6}$
- ☐ D. $\frac{5}{6}$

Q13. Where does $\frac{7}{4}$ land on a number line?

- ☐ A. Exactly on 2
- ☐ B. $\frac{1}{4}$ past 1
- ☐ C. $\frac{3}{4}$ past 1

☐ D. Before 1

Q14. Ten equal steps from 0 to 1. Which fraction is the maroon 7th step?



0 to 1 in tenths, maroon is step 7

☐ A. $10/7$

☐ B. $7/10$

☐ C. $7/7$

☐ D. $3/10$

Q15. Which two fractions land on the exact same point on a number line?

☐ A. $1/2$ and $2/5$

☐ B. $3/5$ and $4/6$

☐ C. $1/3$ and $1/4$

☐ D. $2/3$ and $4/6$

Q16. Kabir marks $9/4$ on a number line. Between which two whole numbers does his mark fall?

☐ A. Between 2 and 3

☐ B. Between 1 and 2

☐ C. Between 0 and 1

☐ D. Exactly on 2

Q17. Maroon sits exactly in the middle of 0 and 1. Which fraction is that?



☐ A. $1/3$

☐ B. $2/3$

☐ C. $1/4$

☐ D. $1/2$

Q18. Anaya wants to mark $5/6$ and $10/12$ on the same number line to check if they match. Do they land on the same point?

- ☐ A. No, they are different values
- ☐ B. Only if the line is split into 6 parts
- ☐ C. Yes, since $10/12$ simplifies to $5/6$
- ☐ D. Cannot be determined without measuring

Q19. How many quarter-steps ($1/4$ each) does it take to reach 2 from 0?

- ☐ A. 4
- ☐ B. 8
- ☐ C. 6
- ☐ D. 2

Q20. The 5th of 5 equal steps from 0 to 1: which whole number, and why?

- ☐ A. 1
- ☐ B. 0
- ☐ C. 5
- ☐ D. It does not land on a whole number

Section C - Challenge

Q21. Twelve equal parts. Maroon is both $1/3$ and $4/12$. Which mark is that?



12 equal parts; maroon is also $1/3$

- ☐ A. The 4th mark
- ☐ B. The 3rd mark
- ☐ C. The 1st mark
- ☐ D. The 12th mark

Q22. Two number lines are split into 6 and 9 parts respectively. Which fraction pair, marked on each, would land on the same point?

- ☐ A. $4/6$ and $5/9$
- ☐ B. $4/6$ and $6/9$
- ☐ C. $3/6$ and $5/9$
- ☐ D. $2/6$ and $4/9$

Q23. Kabir marks $1\frac{1}{4}$ on a number line. How many FULL whole numbers does his mark pass before landing?

- ☐ A. 3
- ☐ B. 1
- ☐ C. 2
- ☐ D. 4

Q24. Quarters from 0 to 2. Maroon is 6 quarter-steps from 0. What fraction is it?



- ☐ A. $\frac{6}{4}$, equal to $2\frac{1}{2}$
- ☐ B. $\frac{6}{4}$, equal to $1\frac{2}{4}$
- ☐ C. $\frac{4}{6}$
- ☐ D. $\frac{1}{6}$

Q25. A fraction $\frac{a}{b}$ marks the same point as $\frac{3}{5}$. If $b=15$, what must a be?

- ☐ A. 5
- ☐ B. 3
- ☐ C. 15
- ☐ D. 9

Q26. Anaya marks $\frac{7}{3}$ on a number line by first converting it to a mixed number. What mixed number is it?

- ☐ A. 2 and $\frac{1}{3}$
- ☐ B. 2 and $\frac{2}{3}$
- ☐ C. 3 and $\frac{1}{3}$
- ☐ D. 1 and $\frac{1}{3}$

Q27. One grid must already hold both $\frac{1}{2}$ and $\frac{1}{3}$. How many equal parts?



six equal parts fit both marks

- ☐ A. 6, since it's a multiple of both 2 and 3

- ☐ B. 5, since it's between 2 and 3
- ☐ C. 2, since it's the smaller denominator
- ☐ D. It's impossible to show both on one grid

Q28. A number line marked in eighths shows a point at the 10th step. Simplify this fraction to its lowest terms.

- ☐ A. $10/8$ cannot be simplified
- ☐ B. $2/1$
- ☐ C. $1/5$
- ☐ D. $5/4$

Q29. Which of these fractions does NOT land on a whole number when marked?

- ☐ A. $5/5$
- ☐ B. $8/8$
- ☐ C. $7/3$
- ☐ D. $4/4$

Q30. $2/4$, $3/6$, and $4/8$ mark one point. What simplest fraction, and why?

- ☐ A. $1/4$
- ☐ B. $1/2$
- ☐ C. $2/3$
- ☐ D. $3/4$

Answer Key

Q1: (B) (b) At the 3rd mark. The numerator tells you how many parts to count from 0, so $\frac{3}{4}$ lands at the third of four marks.

Q2: (C) (c) Yes. They are equivalent fractions, so despite different denominators they mark the exact same point.

Q3: (B) (b) How many parts to count from 0. The numerator is how many equal steps you take once the denominator has set the step size.

Q4: (D) (d) On 0. A numerator of 0 means zero steps are taken, landing exactly where you started.

Q5: (D) (d) Exactly on 1. When the numerator equals the denominator, the fraction lands exactly on the next whole number.

Q6: (A) (a) Greater than 1. Since the numerator (5) is bigger than the denominator (4), the fraction is worth more than one whole.

Q7: (C) (c) How many equal parts to split the whole into. The denominator sets the size of each step before any counting happens.

Q8: (A) (a) An improper fraction. Numerator greater than denominator means the fraction is worth more than 1, which is what defines an improper fraction.

Q9: (A) (a) 4. The denominator tells you how many equal parts to split the segment into.

Q10: (B) (b) Both, since they marked the same point. Different denominators can validly produce grids of different fineness that still land on the same equivalent fraction.

Q11: (B) (b) At the 5th mark. Counting 5 steps of $\frac{1}{6}$ each from 0 lands on the fifth of the six marks, just before the whole number 1.

Q12: (A) (a) $\frac{4}{6}$. Multiplying both the numerator and denominator of $\frac{2}{3}$ by 2 gives $\frac{4}{6}$, an equivalent fraction landing on the same point.

Q13: (C) (c) $\frac{3}{4}$ past 1. $\frac{7}{4}$ equals 1 and $\frac{3}{4}$, so it lands three quarter-steps past the whole number 1.

Q14: (B) (b) $\frac{7}{10}$. Counting 7 of the 10 equal steps from 0 gives exactly the fraction $\frac{7}{10}$.

Q15: (D) (d) $\frac{2}{3}$ and $\frac{4}{6}$. Multiplying $\frac{2}{3}$'s numerator and denominator by 2 gives exactly $\frac{4}{6}$, confirming they are equivalent and land on the same point.

Q16: (A) (a) Between 2 and 3. $\frac{9}{4}$ equals 2 and $\frac{1}{4}$, so it falls just after the whole number 2, within the next segment.

Q17: (D) (d) $\frac{1}{2}$. Splitting the segment into 2 equal parts and counting 1 step lands exactly at the midpoint.

Q18: (C) (c) Yes, since $\frac{10}{12}$ simplifies to $\frac{5}{6}$. Dividing both the numerator and denominator of $\frac{10}{12}$ by 2 gives $\frac{5}{6}$, confirming they are equivalent.

Q19: (B) (b) 8. Each whole number needs 4 quarter-steps, so reaching 2 needs $4+4=8$ steps of $\frac{1}{4}$ each.

Q20: (A) (a) 1. $\frac{5}{5}$ has numerator equal to denominator, so it lands exactly on the whole number 1, regardless of how many parts the segment was split into.

Q21: (A) (a) The 4th mark. Since $\frac{1}{3} = \frac{4}{12}$, both fractions describe the exact same point, which is the 4th of the 12 equal steps.

Q22: (B) (b) $\frac{4}{6}$ and $\frac{6}{9}$. Both simplify to $\frac{2}{3}$, confirming they mark the exact same point despite the different denominators used on each line.

Q23: (C) (c) 2. $\frac{11}{4}$ equals 2 and $\frac{3}{4}$, so the mark passes the whole numbers 1 and 2 completely before landing $\frac{3}{4}$ of the way into the third segment.

Q24: (B) (b) $\frac{6}{4}$, equal to 1 and $\frac{2}{4}$. Six quarter-steps from 0 lands at $\frac{6}{4}$, which simplifies to 1 and $\frac{1}{2}$ (that is, 1 and $\frac{2}{4}$ unreduced) — past the whole number 1 by two more quarter-steps.

Q25: (D) (d) 9. Since 15 is 3 times 5, the numerator must also be scaled by 3: $3 \times 3 = 9$, giving the equivalent fraction $\frac{9}{15}$.

Q26: (A) (a) 2 and $\frac{1}{3}$. 7 divided by 3 is 2 remainder 1, giving the mixed number 2 and $\frac{1}{3}$, which lands one-third of the way past the whole number 2.

Q27: (A) (a) 6, since it's a multiple of both 2 and 3. Splitting into 6 equal parts lets $\frac{1}{2}$ land on the 3rd mark ($\frac{3}{6}$) and $\frac{1}{3}$ land on the 2nd mark ($\frac{2}{6}$), both falling on existing grid lines.

Q28: (D) (d) $\frac{5}{4}$. $\frac{10}{8}$ divides top and bottom by 2 to give $\frac{5}{4}$, its simplest equivalent form, still marking the same point past the whole number 1.

Q29: (C) (c) $\frac{7}{3}$. Since 7 is not a multiple of 3, this fraction lands between two whole numbers, unlike the others where numerator equals denominator exactly.

Q30: (B) (b) $\frac{1}{2}$. All three fractions simplify to $\frac{1}{2}$ when reduced to lowest terms, confirming they describe the identical point on the number line.

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