EXPRESSWALA ACADEMY

Fractions and Rational Numbers

MCQ Test, Set 08

Time: 30 minutes | Maximum marks: 25

Name: _____ Class: _____ Date: _____

1. There are 25 questions. Each has exactly one correct answer: choose A, B, C or D.
2. Each correct answer carries 1 mark. There is no negative marking.
3. The key sheet and worked solutions are at the end of this test.

1. A rectangle is divided into 16 equal parts and 9 parts are shaded. The part that is not shaded is

A. $\frac{7}{9}$ **B.** $\frac{9}{16}$ **C.** $\frac{16}{7}$ **D.** $\frac{7}{16}$

2. $1 + \frac{7}{10}$ written as an improper fraction is

A. $\frac{8}{11}$ **B.** $\frac{17}{7}$ **C.** $\frac{17}{10}$ **D.** $\frac{8}{10}$

3. Among $\frac{26}{11}, \frac{6}{7}, \frac{7}{12}, \frac{9}{11}$, the improper fraction is

A. $\frac{9}{11}$ **B.** $\frac{26}{11}$ **C.** $\frac{6}{7}$ **D.** $\frac{7}{12}$

4. $\frac{16}{3}$ as a mixed fraction is

A. $4\frac{1}{3}$ **B.** $6\frac{1}{3}$ **C.** $5\frac{2}{3}$ **D.** $5\frac{1}{3}$

5. $6\frac{11}{13}$ as an improper fraction is

A. $\frac{67}{13}$ **B.** $\frac{89}{13}$ **C.** $\frac{17}{13}$ **D.** $\frac{79}{13}$

6. A like fraction of $\frac{11}{9}$ is

A. $\frac{16}{10}$ **B.** $\frac{11}{8}$ **C.** $\frac{9}{11}$ **D.** $\frac{16}{9}$

7. $6 = \frac{\square}{8}$. The number in the box is

A. 14 **B.** 8 **C.** 48 **D.** 6

8. $\frac{11}{12} = \frac{\square}{72}$. The number in the box is

A. 66 **B.** 17 **C.** 6 **D.** 71

9. The simplest form of $\frac{-14}{-21}$ is

A. $\frac{-2}{-3}$ **B.** $-\frac{2}{3}$ **C.** $\frac{14}{21}$ **D.** $\frac{2}{3}$

10. Among $\frac{-4}{-5}, \frac{7}{-4}, \frac{28}{16}, -\frac{1}{9}$, the one in standard form is

A. $\frac{-4}{-5}$ **B.** $-\frac{1}{9}$ **C.** $\frac{7}{-4}$ **D.** $\frac{28}{16}$

11. The smallest of $-20, -38, 8, 19$ is

A. -20 **B.** -38 **C.** 19 **D.** 8

12. The descending order of $\frac{1}{10}, \frac{3}{4}, \frac{1}{3}$ is

A. $\frac{3}{4}, \frac{1}{3}, \frac{1}{10}$ **B.** $\frac{1}{10}, \frac{1}{3}, \frac{3}{4}$

C. $\frac{1}{10}, \frac{3}{4}, \frac{1}{3}$ **D.** $\frac{3}{4}, \frac{1}{10}, \frac{1}{3}$

---

13. To compare $\frac{3}{8}$ and $\frac{6}{13}$ by cross multiplication, 3×13 is compared with

A. 3×8 **B.** 8×13 **C.** 3×6 **D.** 8×6

---

14. $\frac{18}{25} + \frac{25}{25} - \frac{11}{25} =$

A. $\frac{54}{25}$ **B.** $\frac{32}{25}$ **C.** $-\frac{32}{25}$ **D.** $\frac{32}{75}$

---

15. $\frac{11}{9} - \frac{5}{12} =$

A. $\frac{29}{36}$ **B.** $\frac{6}{36}$ **C.** $-\frac{29}{36}$ **D.** $\frac{6}{21}$

---

16. $\frac{5}{6} + \frac{13}{12} - \frac{1}{2} =$

A. $-\frac{17}{12}$ **B.** $\frac{17}{20}$ **C.** $\frac{17}{12}$ **D.** $\frac{29}{12}$

---

17. $2 - \frac{25}{12} =$

A. $\frac{49}{12}$ **B.** $-\frac{1}{12}$ **C.** $\frac{1}{12}$ **D.** $-\frac{23}{12}$

---

18. $\frac{17}{4} \times \frac{4}{19} \times \frac{19}{8} =$

A. $\frac{17}{8}$ **B.** $\frac{8}{17}$ **C.** $\frac{17}{608}$ **D.** 1

---

19. $-\frac{27}{14} \times \frac{5}{3} =$

A. $-\frac{45}{14}$ **B.** $\frac{45}{14}$ **C.** $-\frac{81}{70}$ **D.** $-\frac{32}{17}$

---

20. $2\frac{3}{5} \times 10 =$

A. 14 **B.** $\frac{103}{5}$ **C.** 26 **D.** $\frac{13}{50}$

---

21. The reciprocal of $\frac{31}{18}$ is

A. $-\frac{18}{31}$ **B.** $\frac{31}{18}$ **C.** $-\frac{31}{18}$ **D.** $\frac{18}{31}$

---

22. $11\frac{5}{6} \div 7 =$

A. $\frac{497}{6}$ **B.** $\frac{101}{42}$ **C.** $\frac{71}{42}$ **D.** $\frac{42}{71}$

---

23. The greatest among $\frac{1}{-26}, \frac{1}{-8}, \frac{1}{-18}, \frac{1}{-20}$ is

A. $\frac{1}{-26}$ **B.** $\frac{1}{-8}$ **C.** $\frac{1}{-20}$ **D.** $\frac{1}{-18}$

---

24. If $-9 < -6$, then multiplying both sides by 6 gives

A. $54 < 36$ **B.** $-54 > -36$ **C.** $-54 < -36$ **D.** $-54 = -36$

---

25. The part of the number line from -1 to 0 is divided into 12 equal parts. The 11th point to the left of 0 is

A. $\frac{11}{12}$ **B.** $-\frac{1}{12}$ **C.** $-\frac{11}{12}$ **D.** $-\frac{12}{11}$

Key sheet

1. D	**2.** C	**3.** B	**4.** D	**5.** B
6. D	**7.** C	**8.** A	**9.** D	**10.** B
11. B	**12.** A	**13.** D	**14.** B	**15.** A
16. C	**17.** B	**18.** A	**19.** A	**20.** C
21. D	**22.** C	**23.** A	**24.** C	**25.** C

Solutions

1. A rectangle is divided into 16 equal parts and 9 parts are shaded. The part that is not shaded is

Unshaded parts $= 16 - 9 = 7$

Unshaded region $= \frac{7}{16}$

Ans: (D) $\frac{7}{16}$

---

2. $1 + \frac{7}{10}$ written as an improper fraction is

$1 = \frac{10}{10}$

$\frac{10}{10} + \frac{7}{10} = \frac{17}{10}$

Ans: (C) $\frac{17}{10}$

---

3. Among $\frac{26}{11}, \frac{6}{7}, \frac{7}{12}, \frac{9}{11}$, the improper fraction is

In an improper fraction the numerator is greater than or equal to the denominator.

$26 > 11$, so $\frac{26}{11}$ is improper.

Ans: (B) $\frac{26}{11}$

---

4. $\frac{16}{3}$ as a mixed fraction is

$16 \div 3$: quotient 5, remainder 1

$\frac{16}{3} = 5 + \frac{1}{3} = 5\frac{1}{3}$

Ans: (D) $5\frac{1}{3}$

---

5. $6\frac{11}{13}$ as an improper fraction is

$6\frac{11}{13} = \frac{(6 \times 13) + 11}{13}$

$= \frac{78 + 11}{13} = \frac{89}{13}$

Ans: (B) $\frac{89}{13}$

---

6. A like fraction of $\frac{11}{9}$ is

Like fractions have the same denominator.

$\frac{16}{9}$ has denominator 9.

Ans: (D) $\frac{16}{9}$

---

7. $6 = \frac{\square}{8}$. The number in the box is

$6 = \frac{6}{1} = \frac{6 \times 8}{1 \times 8} = \frac{48}{8}$

Ans: (C) 48

---

8. $\frac{11}{12} = \frac{\square}{72}$. The number in the box is

$72 \div 12 = 6$

$\frac{11}{12} = \frac{11 \times 6}{12 \times 6} = \frac{66}{72}$

Ans: (A) 66

---

9. The simplest form of $\frac{-14}{-21}$ is

$\frac{-14}{-21} = \frac{14}{21}$, since $(-)/(-) = (+)$

H.C.F of $14, 21 = 7$, so $= \frac{2}{3}$

Ans: (D) $\frac{2}{3}$

---

10. Among $\frac{-4}{-5}, \frac{7}{-4}, \frac{28}{16}, -\frac{1}{9}$, the one in standard form is

Standard form: numerator and denominator have no common divisor other than 1, and the denominator is positive.

$\frac{7}{-4}$ and $\frac{-4}{-5}$ have negative denominators; $\frac{28}{16}$ has the common factor 4.

So $-\frac{1}{9}$ is in standard form.

Ans: (B) $-\frac{1}{9}$

---

11. The smallest of $-20, -38, 8, 19$ is

$-38 < -20 < 8 < 19$

So the smallest is -38.

Ans: (B) -38

---

12. The descending order of $\frac{1}{10}, \frac{3}{4}, \frac{1}{3}$ is

L.C.M of $10, 4, 3 = 2 \times 5 \times 2 \times 3 = 60$

$\frac{1}{10} = \frac{6}{60}, \frac{3}{4} = \frac{45}{60}, \frac{1}{3} = \frac{20}{60}$

Descending order: $\frac{3}{4} > \frac{1}{3} > \frac{1}{10}$

Ans: (A) $\frac{3}{4}, \frac{1}{3}, \frac{1}{10}$

---

13. To compare $\frac{3}{8}$ and $\frac{6}{13}$ by cross multiplication, 3×13 is compared with

Rule: $\frac{p}{q} > \frac{r}{s}$ if $ps > qr$.

Here $p = 3, q = 8, r = 6, s = 13$, so 3×13 is compared with 8×6.

Ans: (D) 8×6

---

14. $\frac{18}{25} + \frac{25}{25} - \frac{11}{25} =$

Like fractions: keep the denominator, add and subtract the numerators.

$= \frac{18+25-11}{25} = \frac{32}{25}$

Ans: (B) $\frac{32}{25}$

---

15. $\frac{11}{9} - \frac{5}{12} =$

L.C.M of $9, 12 = 3 \times 3 \times 4 = 36$

$= \frac{44-15}{36}$

$= \frac{29}{36}$

Ans: (A) $\frac{29}{36}$

---

16. $\frac{5}{6} + \frac{13}{12} - \frac{1}{2} =$

L.C.M of $6, 12, 2 = 2 \times 3 \times 2 = 12$

$= \frac{10+13-6}{12}$

$= \frac{23-6}{12}$

$= \frac{17}{12}$

Ans: (C) $\frac{17}{12}$

---

17. $2 - \frac{25}{12} =$

Write $2 = \frac{2}{1}$.

$2 - \frac{25}{12} = \frac{24-25}{12} = -\frac{1}{12}$

Ans: (B) $-\frac{1}{12}$

---

18. $\frac{17}{4} \times \frac{4}{19} \times \frac{19}{8} =$

$= \frac{17 \times 4 \times 19}{4 \times 19 \times 8}$

Cancelling 4 and 19: $= \frac{17}{8}$

Ans: (A) $\frac{17}{8}$

---

19. $-\frac{27}{14} \times \frac{5}{3} =$

Sign: $(-) \times (+) = (-)$

$= -\frac{27 \times 5}{14 \times 3}$

$= -\frac{(3 \times 3 \times 3) \times 5}{(2 \times 7) \times 3}$

Cancelling the common factor 3: $= -\frac{3 \times 3 \times 5}{2 \times 7} = -\frac{45}{14}$

Ans: (A) $-\frac{45}{14}$

---

20. $2\frac{3}{5} \times 10 =$

$2\frac{3}{5} = \frac{(2 \times 5)+3}{5} = \frac{13}{5}$

$\frac{13}{5} \times \frac{10}{1} = 26$ (cancelling common factors)

Ans: (C) 26

---

21. The reciprocal of $\frac{31}{18}$ is

Reciprocal of $\frac{c}{d}$ is $\frac{d}{c}$; the sign stays.

Reciprocal of $\frac{31}{18}$ is $\frac{18}{31}$.

Ans: (D) $\frac{18}{31}$

---

22. $11\frac{5}{6} \div 7 =$

$11\frac{5}{6} = \frac{(11 \times 6)+5}{6} = \frac{71}{6}$

$\frac{71}{6} \times \frac{1}{7} = \frac{71}{42}$

Ans: (C) $\frac{71}{42}$

---

23. The greatest among $\frac{1}{-26}, \frac{1}{-8}, \frac{1}{-18}, \frac{1}{-20}$ is

$-26 < -20 < -18 < -8$ (all have the same sign)

$\Rightarrow \frac{1}{-26} > \frac{1}{-20} > \frac{1}{-18} > \frac{1}{-8}$

So the greatest is $\frac{1}{-26}$.

Ans: (A) $\frac{1}{-26}$

---

24. If $-9 < -6$, then multiplying both sides by 6 gives

Rule: $a < b \Rightarrow ma < mb$ if $m > 0$ (the sign stays).

$6 \times (-9) = -54$, $6 \times (-6) = -36$, so $-54 < -36$

Ans: (C) $-54 < -36$

---

25. The part of the number line from -1 to 0 is divided into 12 equal parts. The 11th point to the left of 0 is

Each part $= \frac{1}{12}$; to the left of 0 the numbers are negative.

11 parts to the left of 0: $-\frac{11}{12}$

Ans: (C) $-\frac{11}{12}$