Improper Fractions and Mixed Numbers

P = Proper Fraction
I = Improper Fraction
M = Mixed Numbers

Identify whether the following numbers are proper, improper, or mixed numbers.
1.   16/15
I
2.   15/16
P
3.   16/16
I
4.   4 1/5
M
5.   32/3
I
6.   ¼
I
7.   3/8
I
8.   17/9
I
9.   10 2/3
M
10. 21/21
I

Turn the following improper fractions into mixed numbers. Make sure to show your work, including all intermediate steps!
11. 15/15

$$\frac{15}{15} = 1\frac{0}{15} = 1 \qquad A: 1$$

12. 31/15

$$\frac{31}{15} = 2\frac{1}{15}$$

$$A: 2\frac{1}{15}$$

$$\begin{array}{r} 2\ R1 \\ 15\overline{)37} \\ -30 \\ \hline 1 \end{array}$$

13. 10/8

$$\frac{10}{8} = \frac{5}{4} = 1\frac{1}{4}$$

$$A: 1\frac{1}{4}$$

$$\begin{array}{r} 1\ R1 \\ 4\overline{)5} \\ -4 \\ \hline 1 \end{array}$$

14. 5/4

$$\frac{5}{4} = 1\frac{1}{4}$$

$$A: 1\frac{1}{4}$$

$$4\overline{)5}^{1R1} \quad \underline{-4} \quad 1$$

15. 9/9

$$\frac{9}{9} = 1\frac{0}{9} = 1 \qquad A: 1$$

16. 9/7

$$\frac{9}{7} = 1\frac{2}{7} \qquad\qquad A: 1\frac{2}{7}$$

$$7\overline{)9}^{1R2} \quad \underline{-2} \quad 2$$

17. 10/6

$$\frac{10}{6} = \frac{5}{3} = 1\frac{2}{3}$$

$$\begin{array}{r} 1R2 \\ 3\overline{)5} \\ -3 \\ \hline 2 \end{array}$$

A: $1\frac{2}{3}$

18. 7/4

$$\frac{7}{4} = 1\frac{3}{4}$$

$$\begin{array}{r} 1R3 \\ 4\overline{)7} \\ -4 \\ \hline 3 \end{array}$$

A: $1\frac{3}{4}$

19. 18/18

$$\frac{18}{18} = 1\frac{0}{18} = 1$$

A: 1

20. 32/3

$$\frac{32}{3} = 10 \frac{2}{3}$$

$$A: 10 \frac{2}{3}$$

$$3 \overline{)\underset{\underset{02}{-32}}{32}} 10 \, R2$$

Turn the following mixed numbers into improper fractions. Make sure to show your work including all intermediate steps!

21. 6 4/5

$$6 \frac{4}{5} = \frac{34}{5}$$

$$6 \times 5 + 4 = 34$$

$$A: \frac{34}{5}$$

22. 2 1/3

$$2 \frac{1}{3} = \frac{7}{3}$$

$$3 \times 2 + 1 = 7$$

$$A: \frac{7}{3}$$

23. 4 5/7

$4\frac{5}{7} = \frac{32}{7}$

$7 \times 4 + 5 = 32$

$A: \frac{32}{7}$

24. 3 7/8

$3\frac{7}{8} = \frac{31}{8}$

$8 \times 3 + 7 = 31$

$A: \frac{31}{8}$

25. 2 3/8

$2\frac{3}{8} = \frac{19}{8}$

$8 \times 2 + 3 = 19$

$A: \frac{19}{8}$

26. 1 ¾

$$1\frac{3}{4} = \frac{7}{4}$$
$$4 \times 1 + 3 = 7$$

$$A: \frac{7}{4}$$

27. 5 1/6

$$5\frac{1}{6} = \frac{31}{6}$$
$$6 \times 5 + 1 = 31$$

$$A: \frac{31}{6}$$

28. 4 7/10

$$4\frac{7}{10} = \frac{47}{10}$$
$$10 \times 4 + 7 = 47$$

$$A: \frac{47}{10}$$

29. 3 4/5

$$3\frac{4}{5} = \frac{19}{5}$$

$$5 \times 3 + 4 = 19$$

$$A: \frac{19}{5}$$

30. 17 18/19

$$17\frac{18}{19} = \frac{341}{19}$$

$$\begin{array}{r} \overset{6}{1}9 \\ \times 17 \\ \hline 133 \\ +190 \\ \hline 323 \end{array}$$

$$\begin{array}{r} 3\overset{1}{2}3 \\ + 18 \\ \hline 341 \end{array}$$

$$A: \frac{341}{19}$$