

Name: Class:

Estimate quotients when dividing mixed numbers.

Estimate the quotients of the mixed numbers below. Which sign makes the statement true? ($>$, $<$, $=$).

1. $27\frac{3}{4} \div 4\frac{2}{9}$ 11

2. 25 $20\frac{5}{9} \div 7$

3. $3\frac{3}{4} \div 2\frac{1}{3}$ 8

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1. $27\frac{3}{4} \div 4\frac{2}{9}$ 11

turn each mixed number to the nearest whole number.

$$\begin{array}{r}
 27\frac{3}{4} \div 4\frac{2}{9} \\
 \downarrow \qquad \qquad \downarrow \\
 27.75 \div 4.222 \\
 \downarrow \qquad \qquad \downarrow \\
 28 \div 4
 \end{array}$$

divide the whole numbers (divide 28 by 4)

$$\frac{28}{4} = \frac{28 \div 4}{4 \div 4} = 7$$

Compare. The estimated quotient of $27\frac{3}{4} \div 4\frac{2}{9} = 7$
 Since $7 < 11$

So, $27\frac{3}{4} \div 4\frac{2}{9}$ 11

2. 25 $20\frac{5}{9} \div 7$

$$\begin{array}{r}
 20\frac{5}{9} \div 7 \\
 \downarrow \qquad \qquad \downarrow \\
 20.55 \div 7 \\
 \downarrow \qquad \qquad \downarrow \\
 21 \div 7
 \end{array}$$

divide the whole numbers (divide 21 by 7)

$$\frac{21}{7} = \frac{21 \div 7}{7 \div 7} = 3$$

Compare. The estimated quotient of $20\frac{5}{9} \div 7 = 3$
 Since $25 > 3$

So, 25 $20\frac{5}{9} \div 7$

3. $3\frac{3}{4} \div 2\frac{1}{3}$ 8

$$\begin{array}{r}
 3\frac{3}{4} \div 2\frac{1}{3} \\
 \downarrow \qquad \qquad \downarrow \\
 3.75 \div 2.33 \\
 \downarrow \qquad \qquad \downarrow \\
 4 \div 2
 \end{array}$$

divide the whole numbers (divide 4 by 2)

$$\frac{4}{2} = \frac{4 \div 2}{2 \div 2} = 2$$

Compare. The estimated quotient of $3\frac{3}{4} \div 2\frac{1}{3} = 2$
 Since $2 < 8$

So, $3\frac{3}{4} \div 2\frac{1}{3}$ 8