Test answers - Equivalent fractions and comparing fractions

Year: Year 3 · Duration: 30 minutes · /20

Answer to Question 1 (4 marks)

a. The denominator 2 is multiplied by 4 to make 8, so multiply the numerator by 4 too: 1 × 4 = 4. The answer is $\frac{4}{8}$. (1 mark)
b. The numerator 2 is doubled to make 4, so double the denominator: 3 × 2 = 6. The answer is $\frac{4}{6}$. (1 mark)
c. The numerator 6 is halved to make 3, so halve the denominator: 10 ÷ 2 = 5. The answer is $\frac{3}{5}$. (1 mark)
d. Divide the numerator and the denominator of $\frac{2}{4}$ by the same number, 2: 2 ÷ 2 = 1 and 4 ÷ 2 = 2, giving $\frac{1}{2}$. A diagram also shows 2 quarters covering half a bar. (1 mark)

Answer to Question 2 (4 marks)

a. Both fractions are sevenths, so compare the numerators: 3 is less than 5. So $\frac{3}{7} < \frac{5}{7}$. (1 mark)
b. Both are unit fractions. A whole cut into 4 parts has bigger parts than one cut into 8, so $\frac{1}{4} > \frac{1}{8}$. (1 mark)
c. Double the numerator and denominator of $\frac{3}{4}$: $\frac{6}{8}$. They are equivalent, so $\frac{3}{4} = \frac{6}{8}$. (1 mark)
d. For unit fractions, more parts means smaller parts. 6 is the biggest denominator, so the order is $\frac{1}{6}, \frac{1}{3}, \frac{1}{2}$. (1 mark)

Answer to Question 3 (4 marks)

a. The denominators are the same, so add the numerators: 2 + 5 = 7. $\frac{2}{9} + \frac{5}{9} = \frac{7}{9}$. (1 mark)
b. Subtract the numerators and keep the tenths: 7 − 4 = 3, so the answer is $\frac{3}{10}$. (1 mark)
c. 3 + 5 = 8, so the total is $\frac{8}{8}$. Eight eighths make **1 whole**. (1 mark)
d. Ali and Bea eat 3 + 2 = 5 of the 8 pieces. 8 − 5 = 3 pieces are left, which is $\frac{3}{8}$ of the bar. (1 mark)

Answer to Question 4 (4 marks)

a. Each mark is one eighth. Count three marks from 0: one eighth, two eighths, three eighths. The fraction is $\frac{3}{8}$. (1 mark)
b. Half of 8 parts is 4 parts, so the 4th mark is $\frac{4}{8}$, which is equivalent to $\frac{1}{2}$. (1 mark)
c. A quarter is 2 eighths, so three quarters is 6 eighths. The 6th mark, $\frac{6}{8}$, is equivalent to $\frac{3}{4}$. (1 mark)
d. The line from 0 to 1 is cut into 8 equal parts, so **8** eighths make one whole: $\frac{8}{8} = 1$. (1 mark)

Answer to Question 5 (4 marks)

a. Kim eats 4 of the 12 slices: $\frac{4}{12}$. Divide the numerator and denominator by 4: $\frac{4}{12} = \frac{1}{3}$. (2 marks: 1 for $\frac{4}{12}$, 1 for simplest form)
b. Add the slices eaten: 3 + 4 + 2 = 9, so $\frac{9}{12}$ is eaten. Dividing both numbers by 3 gives $\frac{3}{4}$. (1 mark)
c. 12 − 9 = 3 slices are left: $\frac{3}{12}$, which simplifies to $\frac{1}{4}$. Check: $\frac{3}{4} + \frac{1}{4} = 1$ whole pie. (1 mark)