1. Find two fractions equivalent to each:

a) $\dfrac{3}{8} = \dfrac{6}{16} = \dfrac{9}{24}$

b) $\dfrac{2}{7} = \dfrac{4}{14} = \dfrac{6}{21}$

2. Complete the equivalent fractions:

a) $\dfrac{1}{6} = \dfrac{4}{24}$

b) $\dfrac{6}{9} = \dfrac{42}{63}$

3. Write equivalent fractions of $\dfrac{7}{9}$ with numerator 35.

$\dfrac{7}{9} = \dfrac{7 \, X \, 5}{9 \, X \, 5} = \dfrac{35}{45}$

Thus, $\dfrac{35}{45}$ is the required fraction.

4. Write equivalent fractions of $\dfrac{36}{48}$ with denominator 6.

$\dfrac{32}{48} = \dfrac{32 \div 8}{48 \div 8} = \dfrac{4}{6}$

Thus, $\dfrac{4}{6}$ is the required fraction.

5. Write equivalent fractions by division:

a) $\dfrac{18}{45} = \dfrac{18 \div 9}{45 \div 9} = \dfrac{2}{5}$

b) $\dfrac{24}{32} = \dfrac{24 \div 8}{32 \div 8} = \dfrac{3}{4}$

6. Check whether following pairs are equivalent or not:

a) $\dfrac{3}{4}$, $\dfrac{9}{12}$

We cross multiply $\dfrac{3}{4}$ and $\dfrac{9}{12}$

$= \dfrac{9 \, X \, 4}{12 \, X \, 3} = \dfrac{36}{36}$

Since the products are same, $\dfrac{3}{4}$ and $\dfrac{9}{12}$ are equivalent.

b) $\frac{4}{8}$, $\frac{8}{16}$

We cross multiply $\frac{4}{8}$ and $\frac{8}{16}$

$$= \frac{4 \times 16}{8 \times 8} \quad = \frac{64}{64}$$

Since the products are same, $\frac{4}{8}$ and $\frac{8}{16}$ are equivalent.

c) $\frac{3}{4}$, $\frac{20}{24}$

We cross multiply $\frac{3}{4}$ and $\frac{20}{24}$

$$= \frac{3 \times 24}{4 \times 20} = \frac{72}{80}$$

Since the products are not same, $\frac{3}{4}$ and $\frac{20}{24}$ are not equivalent.

d) $\frac{3}{7}$, $\frac{7}{11}$

We cross multiply $\frac{3}{7}$ and $\frac{7}{11}$

$$= \frac{3 \times 11}{7 \times 7} = \frac{33}{49}$$

Since the products are not same, $\frac{3}{7}$ and $\frac{7}{11}$ are not equivalent.

7. Express the following improper fraction as mixed numbers:

a) $\frac{15}{7}$

```
      2
  7 |15
     14
     ‾‾
      1
```

Ans. $2\frac{1}{7}$

b) $\frac{11}{5}$

```
      2
  5 |11
     10
     ‾‾
      1
```

Ans. $2\frac{1}{5}$

c) $\frac{23}{4}$

$$
\begin{array}{r}
5 \\
4\overline{)23} \\
\underline{20} \\
3
\end{array}
$$

Ans. $5\frac{3}{4}$

d) $\frac{17}{5}$

$$
\begin{array}{r}
3 \\
5\overline{)17} \\
\underline{15} \\
2
\end{array}
$$

Ans. $3\frac{2}{5}$

8. Express the following mixed numbers as improper fractions:

a) $2\frac{3}{4}$

$$2\frac{3}{4} = \frac{(4 \times 2) + 3}{4} = \frac{8+3}{4} = \frac{11}{4}$$

Ans. $\frac{11}{4}$

b) $5\frac{1}{2}$

$$5\frac{1}{2} = \frac{(2 \times 5) + 1}{2} = \frac{10 + 1}{2} = \frac{11}{2}$$

Ans. $\frac{11}{2}$

c) $3\frac{2}{5}$

$$3\frac{2}{5} = \frac{(5 \times 3) + 2}{5} = \frac{15 + 2}{5} = \frac{17}{5}$$

Ans. $\frac{17}{5}$

d) $8\frac{4}{9}$

$$8\frac{4}{9} = \frac{(9 \times 8) + 4}{9} = \frac{72 + 4}{9} = \frac{76}{9}$$

Ans. $\frac{76}{9}$

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