

EXERCISE 9.2

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1. Which ratio is larger in the following pairs?

(i) 3: 4 or 9: 16

(ii) 15: 16 or 24: 25

(iii) 4: 7 or 5: 8

(iv) 9: 20 or 8: 13

(v) 1: 2 or 13: 27

Solution:

(i) Given 3: 4 or 9: 16

LCM for 4 and 16 is 16

3: 4 can be written as = $\frac{3}{4}$

$$\frac{3}{4} \times \frac{4}{4} = \frac{12}{16}$$

And we have $\frac{9}{16}$

Clearly $12 > 9$

Therefore 3: 4 > 9: 16

(ii) Given 15: 16 or 24: 25

LCM for 16 and 25 is 400

15: 16 can be written as = $\frac{15}{16}$

$$\frac{15}{16} \times \frac{25}{25} = \frac{375}{400}$$

And we have $\frac{24}{25}$

$$\frac{24}{25} \times \frac{16}{16} = \frac{384}{400}$$

Clearly $384 > 375$

Therefore 15: 16 < 24: 25

(iii) Given 4: 7 or 5: 8

LCM for 7 and 8 is 56

4: 7 can be written as = $\frac{4}{7}$

$$\frac{4}{7} \times \frac{8}{8} = \frac{32}{56}$$

And we have $\frac{5}{8}$

$$\frac{5}{8} \times \frac{7}{7} = \frac{35}{56}$$

Clearly $35 > 32$

Therefore 4: 7 < 5: 8

(iv) Given 9: 20 or 8: 13

LCM for 20 and 13 is 260

9: 20 can be written as = $\frac{9}{20}$

$$\frac{9}{20} \times \left(\frac{13}{13}\right) = \frac{117}{260}$$

And we have $\frac{8}{13}$

$$\frac{8}{13} \times \left(\frac{20}{20}\right) = \frac{160}{260}$$

Clearly $160 > 117$

Therefore $9: 20 < 8: 13$

(v) Given 1: 2 or 13: 27

LCM for 2 and 27 is 54

1: 2 can be written as = $\frac{1}{2}$

$$\frac{1}{2} \times \left(\frac{27}{27}\right) = \frac{27}{54}$$

And we have $\frac{13}{27}$

$$\frac{13}{27} \times \left(\frac{2}{2}\right) = \frac{26}{54}$$

Clearly $27 > 26$

Therefore $1: 2 > 13: 27$

2. Give the equivalent ratios of 6: 8.

Solution:

Given 6: 8

By multiplying both numerator and denominator by 2 we equivalent ratios

$$\frac{6}{8} \times \left(\frac{2}{2}\right) = \frac{12}{16}$$

And also by dividing both numerator and denominator by 2 we equivalent ratios

$$\left(\frac{6}{2}\right) / \left(\frac{8}{2}\right) = \frac{3}{4}$$

Two equivalent ratios are $3: 4 = 12: 16$

3. Fill in the following blanks:

$$\frac{12}{20} = \dots / 5 = \frac{9}{\dots}$$

Solution:

$$\frac{12}{20} = \frac{3}{5} = \frac{9}{15}$$

Explanation:

Consider $\frac{12}{20} = \dots / 5$

Let unknown value be x

Therefore $12/20 = x/5$

On cross multiplying

$$x = 60/20$$

$$x = 3$$

Consider $12/20 = 9/...$

Let the unknown value be y

Therefore $12/20 = 9/y$

On cross multiplying we get

$$y = 180/12$$

$$y = 15$$



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