

Write Yes if the ratios are equal; No if they are not.

1. $3 : 9$ and $4 : 6$

No

2. $4 : 6$ and $6 : 9$

Yes

3. $5 : 15$ and $12 : 21$

No

4. $8 : 12$ and $6 : 9$

Yes

5. $4 : 8$ and $1 : 2$

Yes

6. $1 : 2$ and $2 : 4$

Yes

7. $2 : 4$ and $1 : 2$

Yes

8. $4 : 28$ and $2 : 14$

Yes

9. $4 : 16$ and $10 : 25$

No

10. $6 : 21$ and $4 : 16$

No

11. $4 : 6$ and $30 : 35$

No

12. $10 : 15$ and $3 : 9$

No

Are Ratios Equal

Date _____ Period _____

Solution Steps

$$1) 3 : 9 \text{ and } 4 : 6$$

To express the ratio '3 to 9' as a fraction, place 3 over 9 and reduce

To express the ratio '4 to 6' as a fraction, place 4 over 6 and reduce

$\frac{3}{9}$ can be reduced, since 3 is a factor of both 3 and 9:

$$\frac{3}{9} \div \frac{3}{3} = \frac{1}{3}$$

The fraction is now in lowest terms

$\frac{4}{6}$ can be reduced, since 2 is a factor of both 4 and 6:

$$\frac{4}{6} \div \frac{2}{2} = \frac{2}{3}$$

The fraction is now in lowest terms

$$\frac{3}{9} \text{ is not equal to } \frac{4}{6}$$

$$2) 4 : 6 \text{ and } 6 : 9$$

To express the ratio '4 to 6' as a fraction, place 4 over 6 and reduce

To express the ratio '6 to 9' as a fraction, place 6 over 9 and reduce

$\frac{4}{6}$ can be reduced, since 2 is a factor of both 4 and 6:

$$\frac{4}{6} \div \frac{2}{2} = \frac{2}{3}$$

The fraction is now in lowest terms

$\frac{6}{9}$ can be reduced, since 3 is a factor of both 6 and 9:

$$\frac{6}{9} \div \frac{3}{3} = \frac{2}{3}$$

The fraction is now in lowest terms

$$\frac{4}{6} \text{ is equal to } \frac{6}{9}$$

$$^3) 5 : 15 \text{ and } 12 : 21$$

To express the ratio '5 to 15' as a fraction, place 5 over 15 and reduce

To express the ratio '12 to 21' as a fraction, place 12 over 21 and reduce

$\frac{5}{15}$ can be reduced, since 5 is a factor of both 5 and 15:

$$\frac{5}{15} \div \frac{5}{5} = \frac{1}{3}$$

The fraction is now in lowest terms

$\frac{12}{21}$ can be reduced, since 3 is a factor of both 12 and 21:

$$\frac{12}{21} \div \frac{3}{3} = \frac{4}{7}$$

The fraction is now in lowest terms

$\frac{5}{15}$ is not equal to $\frac{12}{21}$

$$^4) 8 : 12 \text{ and } 6 : 9$$

To express the ratio '8 to 12' as a fraction, place 8 over 12 and reduce

To express the ratio '6 to 9' as a fraction, place 6 over 9 and reduce

$\frac{8}{12}$ can be reduced, since 4 is a factor of both 8 and 12:

$$\frac{8}{12} \div \frac{4}{4} = \frac{2}{3}$$

The fraction is now in lowest terms

$\frac{6}{9}$ can be reduced, since 3 is a factor of both 6 and 9:

$$\frac{6}{9} \div \frac{3}{3} = \frac{2}{3}$$

The fraction is now in lowest terms

$\frac{8}{12}$ is equal to $\frac{6}{9}$

$$^5) 4 : 8 \text{ and } 1 : 2$$

To express the ratio '4 to 8' as a fraction, place 4 over 8 and reduce

To express the ratio '1 to 2' as a fraction, place 1 over 2 and reduce

$\frac{4}{8}$ can be reduced, since 4 is a factor of both 4 and 8:

$$\frac{4}{8} \div \frac{4}{4} = \frac{1}{2}$$

The fraction is now in lowest terms

$$\frac{4}{8} \text{ is equal to } \frac{1}{2}$$

$$^6) 1 : 2 \text{ and } 2 : 4$$

To express the ratio '1 to 2' as a fraction, place 1 over 2 and reduce

To express the ratio '2 to 4' as a fraction, place 2 over 4 and reduce

$\frac{2}{4}$ can be reduced, since 2 is a factor of both 2 and 4:

$$\frac{2}{4} \div \frac{2}{2} = \frac{1}{2}$$

The fraction is now in lowest terms

$$\frac{2}{4} \text{ is equal to } \frac{1}{2}$$

$$^7) 2 : 4 \text{ and } 1 : 2$$

To express the ratio '2 to 4' as a fraction, place 2 over 4 and reduce

To express the ratio '1 to 2' as a fraction, place 1 over 2 and reduce

$\frac{2}{4}$ can be reduced, since 2 is a factor of both 2 and 4:

$$\frac{2}{4} \div \frac{2}{2} = \frac{1}{2}$$

The fraction is now in lowest terms

$$\frac{2}{4} \text{ is equal to } \frac{1}{2}$$

$$8) 4 : 28 \text{ and } 2 : 14$$

To express the ratio '4 to 28' as a fraction, place 4 over 28 and reduce

To express the ratio '2 to 14' as a fraction, place 2 over 14 and reduce

$\frac{4}{28}$ can be reduced, since 4 is a factor of both 4 and 28:

$$\frac{4}{28} \div \frac{4}{4} = \frac{1}{7}$$

The fraction is now in lowest terms

$\frac{2}{14}$ can be reduced, since 2 is a factor of both 2 and 14:

$$\frac{2}{14} \div \frac{2}{2} = \frac{1}{7}$$

The fraction is now in lowest terms

$$\frac{4}{28} \text{ is equal to } \frac{2}{14}$$

$$9) 4 : 16 \text{ and } 10 : 25$$

To express the ratio '4 to 16' as a fraction, place 4 over 16 and reduce

To express the ratio '10 to 25' as a fraction, place 10 over 25 and reduce

$\frac{4}{16}$ can be reduced, since 4 is a factor of both 4 and 16:

$$\frac{4}{16} \div \frac{4}{4} = \frac{1}{4}$$

The fraction is now in lowest terms

$\frac{10}{25}$ can be reduced, since 5 is a factor of both 10 and 25:

$$\frac{10}{25} \div \frac{5}{5} = \frac{2}{5}$$

The fraction is now in lowest terms

$$\frac{4}{16} \text{ is not equal to } \frac{10}{25}$$

$$^{10)} 6 : 21 \text{ and } 4 : 16$$

To express the ratio '6 to 21' as a fraction, place 6 over 21 and reduce

To express the ratio '4 to 16' as a fraction, place 4 over 16 and reduce

$\frac{6}{21}$ can be reduced, since 3 is a factor of both 6 and 21:

$$\frac{6}{21} \div \frac{3}{3} = \frac{2}{7}$$

The fraction is now in lowest terms

$\frac{4}{16}$ can be reduced, since 4 is a factor of both 4 and 16:

$$\frac{4}{16} \div \frac{4}{4} = \frac{1}{4}$$

The fraction is now in lowest terms

$\frac{6}{21}$ is not equal to $\frac{4}{16}$

$$^{11)} 4 : 6 \text{ and } 30 : 35$$

To express the ratio '4 to 6' as a fraction, place 4 over 6 and reduce

To express the ratio '30 to 35' as a fraction, place 30 over 35 and reduce

$\frac{4}{6}$ can be reduced, since 2 is a factor of both 4 and 6:

$$\frac{4}{6} \div \frac{2}{2} = \frac{2}{3}$$

The fraction is now in lowest terms

$\frac{30}{35}$ can be reduced, since 5 is a factor of both 30 and 35:

$$\frac{30}{35} \div \frac{5}{5} = \frac{6}{7}$$

The fraction is now in lowest terms

$\frac{4}{6}$ is not equal to $\frac{30}{35}$

$$^{12)} 10 : 15 \text{ and } 3 : 9$$

To express the ratio '10 to 15' as a fraction, place 10 over 15 and reduce

To express the ratio '3 to 9' as a fraction, place 3 over 9 and reduce

10

$\frac{10}{15}$ can be reduced, since 5 is a factor of both 10 and 15:

$$\frac{10}{15} = \frac{2}{3}$$

$$\frac{10}{15} \div \frac{5}{5} = \frac{2}{3}$$

The fraction is now in lowest terms

3

$\frac{3}{9}$ can be reduced, since 3 is a factor of both 3 and 9:

$$\frac{3}{9} = \frac{1}{3}$$

$$\frac{3}{9} \div \frac{3}{3} = \frac{1}{3}$$

The fraction is now in lowest terms

10

$\frac{10}{15}$ is not equal to $\frac{3}{9}$