

LESSON 12

Multiplication Of Fractions (By Prime Factorizations)

Fractions can be multiplied together to get a reduced answer by writing each number as a product of primes and cancelling like primes in the numerator and denominator.

Example 1: Multiply $\frac{52}{85} \times \frac{51}{91}$

- First Factor Into Primes
- Next Cancel Like Primes In The Numerator
With Those In the Denominators.

$$\frac{52}{85} \times \frac{51}{91} = \frac{2 \times 2 \times \cancel{13}}{5 \times \cancel{17}} \times \frac{3 \times \cancel{17}}{7 \times \cancel{13}} = \frac{12}{35}$$

Find A Reduced Answer By Making Products Of Primes

1. $\frac{38}{69} \times \frac{46}{57} =$	$\frac{2 \times \cancel{19}}{3 \times \cancel{23}} \times$	$\frac{2 \times \cancel{23}}{3 \times \cancel{19}}$	$= \frac{4}{19}$
2. $\frac{17}{69} \times \frac{23}{51} =$	_____ x	_____	= _____
3. $\frac{31}{58} \times \frac{29}{62} =$	_____ x	_____	= _____
4. $\frac{69}{91} \times \frac{13}{92} =$	_____ x	_____	= _____
5. $\frac{11}{51} \times \frac{34}{33} =$	_____ x	_____	= _____
6. $\frac{37}{87} \times \frac{58}{74} =$	_____ x	_____	= _____
7. $\frac{19}{65} \times \frac{41}{95} =$	_____ x	_____	= _____
8. $\frac{22}{93} \times \frac{62}{55} =$	_____ x	_____	= _____
9. $\frac{33}{68} \times \frac{34}{55} =$	_____ x	_____	= _____
10. $\frac{23}{34} \times \frac{17}{46} =$	_____ x	_____	= _____

Find A Reduced Answer By Making Products Of Primes

11. $\frac{57}{82} \times \frac{41}{95} =$	_____ x _____	= _____
12. $\frac{38}{85} \times \frac{34}{76} =$	_____ x _____	= _____
13. $\frac{46}{77} \times \frac{55}{92} =$	_____ x _____	= _____
14. $\frac{29}{51} \times \frac{68}{87} =$	_____ x _____	= _____
15. $\frac{13}{22} \times \frac{77}{78} =$	_____ x _____	= _____
16. $\frac{33}{68} \times \frac{17}{77} =$	_____ x _____	= _____
17. $\frac{55}{67} \times \frac{13}{88} =$	_____ x _____	= _____
18. $\frac{13}{53} \times \frac{17}{26} =$	_____ x _____	= _____
19. $\frac{61}{99} \times \frac{55}{97} =$	_____ x _____	= _____
20. $\frac{76}{83} \times \frac{71}{95} =$	_____ x _____	= _____

Find A Reduced Answer By Making Products Of Primes

21. $\frac{79}{88} \times \frac{77}{97} =$	_____ x _____	= _____
22. $\frac{67}{85} \times \frac{17}{61} =$	_____ x _____	= _____
23. $\frac{44}{97} \times \frac{51}{55} =$	_____ x _____	= _____
24. $\frac{58}{83} \times \frac{31}{87} =$	_____ x _____	= _____
25. $\frac{68}{77} \times \frac{11}{85} =$	_____ x _____	= _____
26. $\frac{11}{89} \times \frac{23}{88} =$	_____ x _____	= _____
27. $\frac{33}{37} \times \frac{29}{88} =$	_____ x _____	= _____
28. $\frac{13}{68} \times \frac{17}{39} =$	_____ x _____	= _____
29. $\frac{33}{41} \times \frac{83}{99} =$	_____ x _____	= _____
30. $\frac{38}{43} \times \frac{86}{95} =$	_____ x _____	= _____