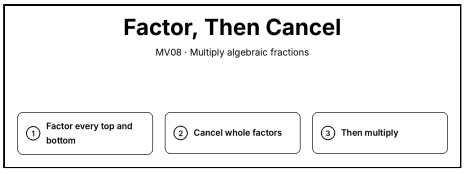
Factor, Then Cancel: teacher script

MV08-V1 · MV08 Multiply algebraic fractions · teachers only. Without a screen, read each Say line and draw each Draw step on the board. About 86 seconds as a video.

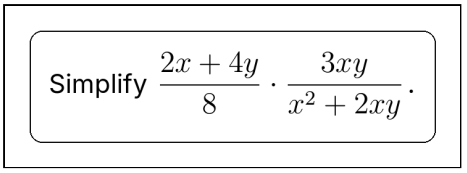
01



Say. Factor, then cancel. First factor every top and bottom, cancel whole factors only, then multiply what is left.

Draw. Write the title “Factor, Then Cancel” and the steps: 1. Factor every top and bottom; 2. Cancel whole factors; 3. Then multiply.

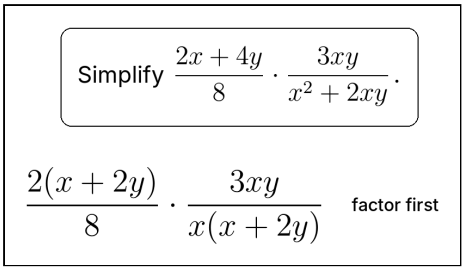
02



Say. Simplify (2x + 4y)/8 times 3xy/(x² + 2xy).

Draw. Clear the board. Write “Simplify (2x + 4y)/8 · 3xy/(x² + 2xy).” in a box at the top.

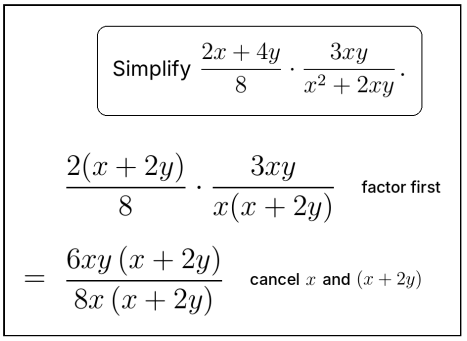
03



Say. Factor: 2x + 4y is two times x + 2y, and x² + 2xy is x times x + 2y.

Draw. Write (2(x + 2y))/8 · 3xy/(x(x + 2y)) on the next line. Beside it, write “factor first”.

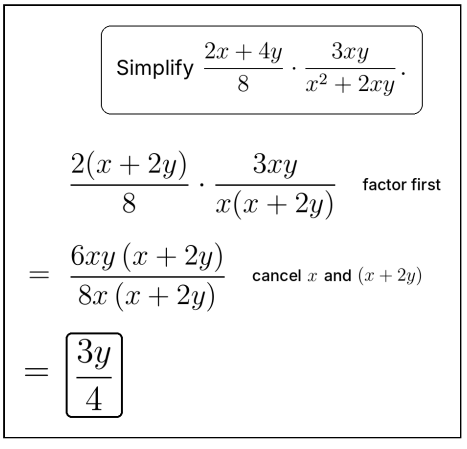
04



Say. Cancel the x, and the whole bracket x + 2y.

Draw. Write = (6xy (x + 2y))/(8x (x + 2y)) on the next line. Beside it, write “cancel x and (x + 2y)”.

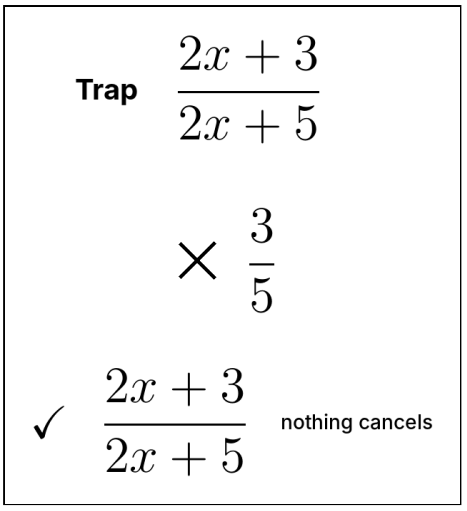
05



Say. Six over eight is three over four: the answer is 3y over four.

Draw. Write = 3y/4 and box it on the next line.

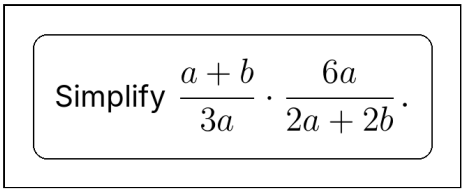
06



Say. Watch for the trap: cancelling part of a sum. In this fraction nothing cancels: the 2x's are parts of sums, not factors.

Draw. Clear the board. Write “Trap” and (2x + 3)/(2x + 5). Below, write 3/5 and cross it out ×. Then write (2x + 3)/(2x + 5) with a tick ✓.

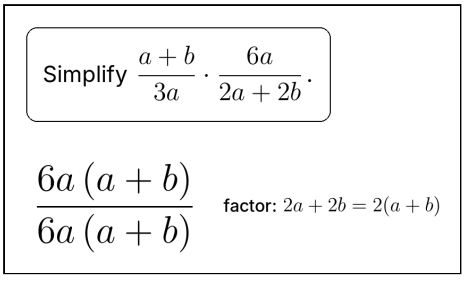
07



Say. Now simplify (a + b)/(3a) times 6a/(2a + 2b).

Draw. Clear the board. Write “Simplify (a + b)/(3a) · 6a/(2a + 2b).” in a box at the top.

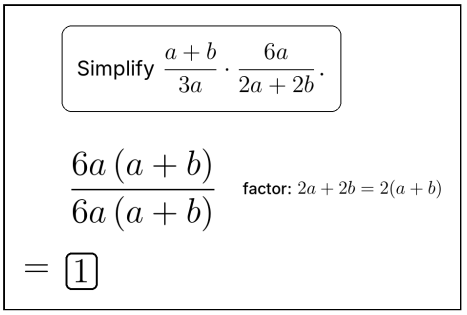
08



Say. Factor the bottom: 2a + 2b is two times a + b. Then multiply.

Draw. Write (6a (a + b))/(6a (a + b)) on the next line. Beside it, write “factor: 2a + 2b = 2(a + b)”.

09



Say. Everything cancels: six a times the bracket, on top and underneath. What is left is 1.

Draw. Write = 1 and box it on the next line.

10

Trap $\dfrac{6a\,(a+b)}{6a\,(a+b)}$

$\times\ 0$

$\checkmark\ 1$

Say. Watch for the trap: writing zero. Cancelling divides. What is left is one.

Draw. Clear the board. Write “Trap” and (6a (a + b))/(6a (a + b)). Below, write 0 and cross it out ×. Then write 1 with a tick ✓.

11

Your turn

Factor first,
then cancel whole factors

Say. Now it is your turn. Factor first, then cancel whole factors.

Draw. Point to today’s activity: Factor first, then cancel whole factors