Build the Common Denominator

MV09-V1 · storyboard · MV09 Common denominator with several letters. Read each picture with its sentences.

Picture 1

Write $\frac{5y}{6x^2} - \frac{4}{3xy}$ as one fraction.

The common denominator

$$6x^2y$$

$$\frac{5y \cdot y}{6x^2y} - \frac{4 \cdot 2x}{6x^2y}$$ rescale each top

$$= \boxed{\frac{5y^2 - 8x}{6x^2y}}$$

1. Write 5y/(6x²) − 4/(3xy) as one fraction.
2. Six and three need six.
3. x² and x need x².
4. And there is a y.
5. So the common denominator is 6x²y.
6. Rescale each top by what its bottom was multiplied by: y for the first, 2x for the second.
7. Combine the tops: 5y² − 8x, over 6x²y.

Picture 2

Trap $\dfrac{5y}{6x^2} - \dfrac{4}{3xy}$

$\times \dfrac{5y-4}{6x^2y}$

✓ $\dfrac{5y^2-8x}{6x^2y}$

8. Watch for the trap: rescaling the bottom but not the top.
9. Whatever multiplies the bottom multiplies the top too.

Picture 3

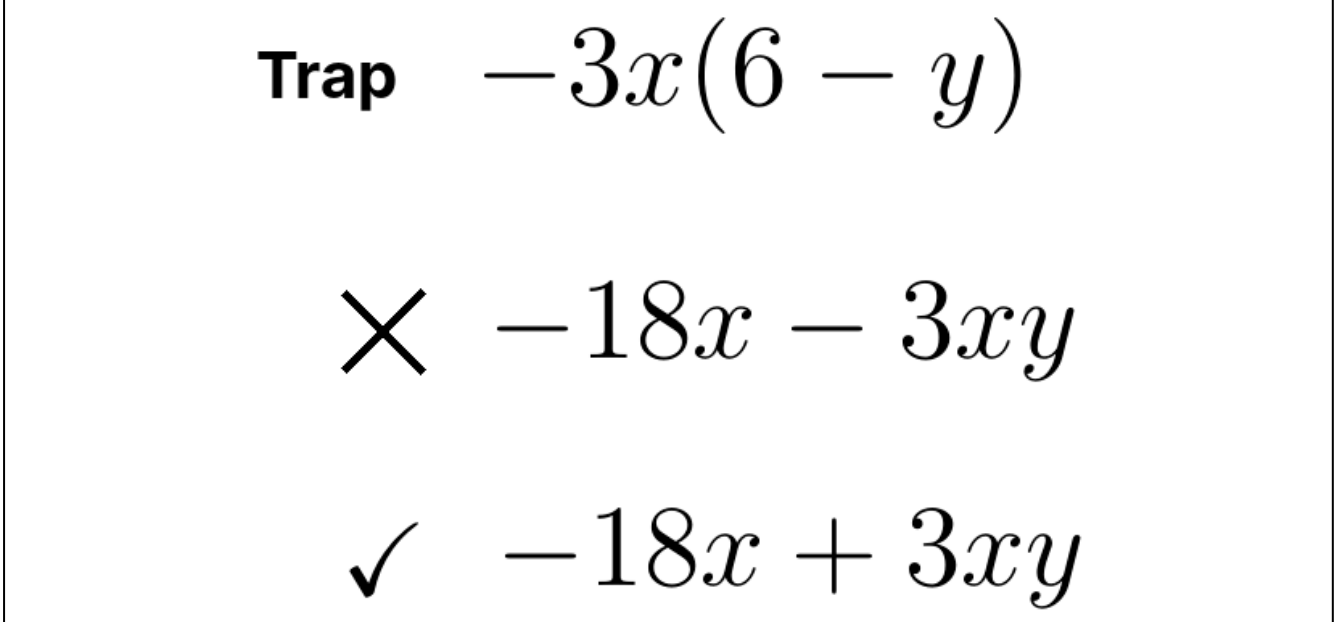
Write $\frac{2y}{9x^2} - \frac{6-y}{3x}$ as one fraction.

$$\frac{2y - 3x(6-y)}{9x^2}$$ keep the bracket

$$= \boxed{\frac{2y - 18x + 3xy}{9x^2}}$$

10. Now write 2y/(9x²) − (6 − y)/(3x) as one fraction.
11. Over 9x², the second top is multiplied by 3x, and it keeps its bracket.
12. The minus changes both signs in the bracket: 2y − 18x + 3xy, over 9x².

Picture 4



13. Watch for the trap: losing the bracket.
14. Negative 3x times negative y is positive 3xy.