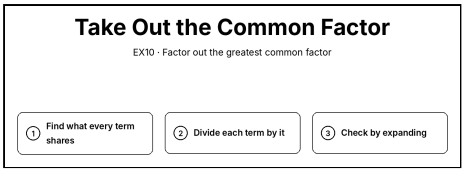
Take Out the Common Factor: teacher script

EX10-V1 · EX10 Factor out the greatest common factor · teachers only. Without a screen, read each Say line and draw each Draw step on the board. About 85 seconds as a video.

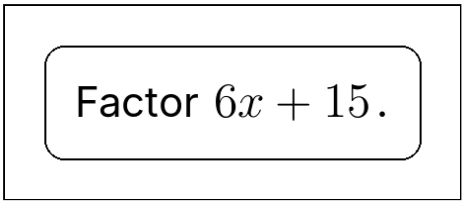
01



Say. Take out the common factor. Find what every term shares, then divide each term by it and write what is left in a bracket. Check by expanding.

Draw. Write the title “Take Out the Common Factor” and the steps: 1. Find what every term shares; 2. Divide each term by it; 3. Check by expanding.

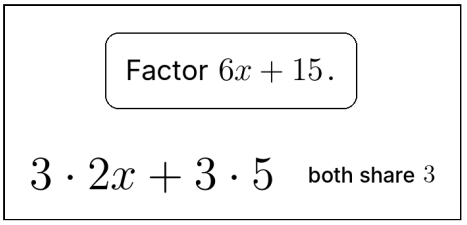
02



Say. Factor 6x + 15.

Draw. Clear the board. Write “Factor 6x + 15.” in a box at the top.

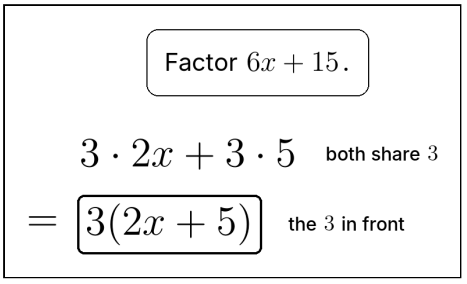
03



Say. Six x and fifteen share a factor of three: three times two x, plus three times five.

Draw. Write 3 · 2x + 3 · 5 on the next line. Beside it, write “both share 3”.

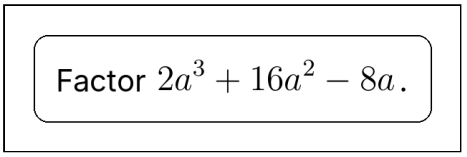
04



Say. Write the three in front, and what is left in the bracket: 3(2x + 5).

Draw. Write = 3(2x + 5) and box it on the next line. Beside it, write “the 3 in front”.

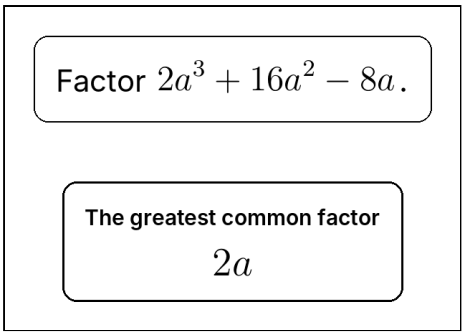
05



Say. Now factor 2a³ + 16a² − 8a.

Draw. Clear the board. Write “Factor 2a³ + 16a² − 8a.” in a box at the top.

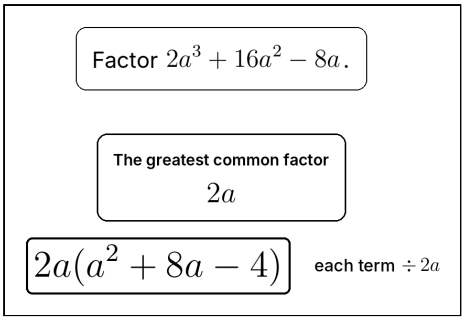
06



Say. The numbers two, sixteen and eight share two, and every term has at least one a. So the greatest common factor is 2a.

Draw. Write the rule in a box: 2a.

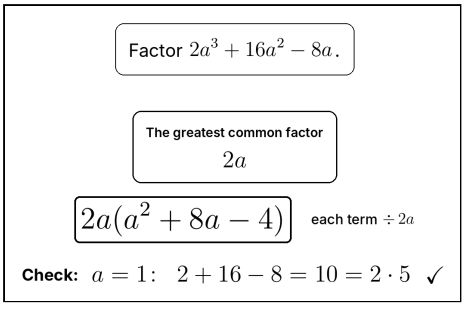
07



Say. Divide each term by 2a: a², then 8a, then −4. So it is 2a(a² + 8a − 4).

Draw. Write 2a(a² + 8a − 4) and box it on the next line. Beside it, write “each term \div 2a”.

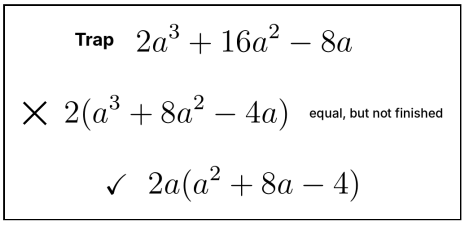
08



Say. Check with a = 1: two plus sixteen minus eight is 10, and two times five is 10 too.

Draw. Below, write “Check: a = 1: 2 + 16 − 8 = 10 = 2 · 5” and tick it ✓.

09



Say. Watch for the trap: not the greatest factor. Taking out only two gives an answer that is equal, but the bracket still shares a. Take out 2a.

Draw. Clear the board. Write “Trap” and 2a³ + 16a² − 8a. Below, write 2(a³ + 8a² − 4a) and cross it out ×. Then write 2a(a² + 8a − 4) with a tick ✓.

10

Trap $3x + 3$

$\times\ 3(x)$

✓ $3(x + 1)$

Say. And a term that is all factor leaves one. 3x + 3 is not three times x. It is three times the bracket x + 1.

Draw. Clear the board. Write “Trap” and 3x + 3. Below, write 3(x) and cross it out ×. Then write 3(x + 1) with a tick ✓.

11

Your turn

Take out what every term shares, and check by expanding

Say. Now it is your turn. Take out what every term shares, and check by expanding.

Draw. Point to today’s activity: Take out what every term shares, and check by expanding