

ACTIVITY: I Have . . . Who Has . . . ?

STRAND: Fractions and Decimals

OBJECTIVES:

- | | |
|-------|---|
| 81308 | To convert a number in standard form to scientific notation |
| 81309 | To convert a number in scientific notation to standard form |

PREREQUISITES:

- To write numbers in expanded form using exponents through 10 and vice versa
- To evaluate expressions which include exponents

MATERIALS NEEDED:

A set of *I have . . . Who has . . . ?* cards

INSTRUCTIONS TO THE TEACHER FOR MAKING ACTIVITY:

See Appendix 2 for instructions for *I Have . . . Who Has . . . ?*

INSTRUCTIONS TO THE TEACHER FOR CONDUCTING ACTIVITY:

1. Shuffle the cards and pass them out to each class member.
2. Have a student read only the question on a card. The student who has the answer to that question reads the answer and the question at the bottom of the card.
3. Play ends when the answer to a question is on the beginning card.

<p>I have</p> $b = -\frac{3}{4}$ <p>Who has</p> <p>the equation of a line perpendicular to</p> $y = 5x + 9?$	<p>I have</p> $y = -\frac{1}{5}x + 3$ <p>Who has</p> <p>the y-intercept of the line</p> $y = 3x + 2?$	<p>I have</p> $b = 2$ <p>Who has</p> <p>the equation of the line with slope 3 and y-intercept 4?</p>
<p>I have</p> $y = 3x + 4$ <p>Who has</p> <p>the y-intercept of the line</p> $y = 2x - 10?$	<p>I have</p> $b = -10$ <p>Who has</p> <p>the slope of the line</p> $x - 5y = 1?$	<p>I have</p> $m = \frac{1}{5}$ <p>Who has</p> <p>the equation of a line parallel to</p> $y = 7x?$
<p>I have</p> $7x - y = 8$ <p>Who has</p> <p>the y-intercept of the line</p> $y = 3x - 4?$	<p>I have</p> $b = -4$ <p>Who has</p> <p>the equation of a line perpendicular to</p> $4x - 3y = 5?$	<p>I have</p> $3x + 4y = 4$ <p>Who has</p> <p>the y-intercept of the line</p> $x - 8y = 12?$

<p>I have</p> $b = -\frac{4}{7}$ <p>Who has</p> <p>the slope of a line parallel to $y = 2x + 5$?</p>	<p>I have</p> $m = 2$ <p>Who has</p> <p>the equation of a line parallel to $2x - 3y = 6$?</p>	<p>I have</p> $2x - 3y = 5$ <p>Who has</p> <p>the slope of a line perpendicular to $y = 2x + 5$?</p>
<p>I have</p> $m = -\frac{1}{2}$ <p>Who has</p> <p>the y-intercept of the line $y = 2x + 5$?</p>	<p>I have</p> $b = 5$ <p>Who has</p> <p>the slope of the line $2x + y = 6$?</p>	<p>I have</p> $m = -2$ <p>Who has</p> <p>the equation of a line parallel to $y = x - 7$?</p>
<p>I have</p> $x - y = 8$ <p>Who has</p> <p>the slope of a line parallel to $y = 3x + 2$?</p>	<p>I have</p> $m = 3$ <p>Who has</p> <p>the slope of a line $2x + 3y = 6$?</p>	<p>I have</p> $m = -\frac{2}{3}$ <p>Who has</p> <p>the slope of a line perpendicular to $y = 3x + 2$?</p>

<p>I have</p> $m = -\frac{1}{3}$ <p>Who has</p> <p>the equation of a line perpendicular to $2x + 3y = 6$?</p>	<p>I have</p> $3x - 2y = 7$ <p>Who has</p> <p>the slope of a line parallel to $y = x - 7$?</p>	<p>I have</p> $m = 1$ <p>Who has</p> <p>the y-intercept of the line $y = x - 7$?</p>
<p>I have</p> $b = -7$ <p>Who has</p> <p>the equation of a line parallel to $2x + 3y = 6$?</p>	<p>I have</p> $2x + 3y = 1$ <p>Who has</p> <p>the slope of a line perpendicular to $y = 5x + 9$?</p>	<p>I have</p> $m = -\frac{1}{5}$ <p>Who has</p> <p>the y-intercept of the line $y = 5x + 9$?</p>
<p>I have</p> $b = 9$ <p>Who has</p> <p>the equation of a line parallel to $y = 3x + 2$?</p>	<p>I have</p> $3x - y = 5$ <p>Who has</p> <p>the slope of the line $x - 4y = 3$?</p>	<p>I have</p> $m = \frac{1}{4}$ <p>Who has</p> <p>the y-intercept of the line $x - 4y = 3$?</p>

<p>I have</p> $m = -\frac{12}{8}$ <p>Who has</p> <p>the equation of a line perpendicular to $x - 5y = 4$?</p>	<p>I have</p> $5x + y = 9$ <p>Who has</p> <p>the equation of a line parallel to $2x - 7y = 8$?</p>	<p>I have</p> $2x - 7y = 10$ <p>Who has</p> <p>the y-intercept of the line $2x - 7y = 8$?</p>
<p>I have</p> $b = -\frac{8}{7}$ <p>Who has</p> <p>the equation of a line perpendicular to $2x - 7y = 9$?</p>	<p>I have</p> $7x + 2y = 1$ <p>Who has</p> <p>the slope of a line parallel to $2x - 5y = 8$?</p>	<p>I have</p> $m = \frac{2}{5}$ <p>Who has</p> <p>the y-intercept of the line $2x - 3y = 9$?</p>
<p>I have</p> $b = -3$ <p>Who has</p> <p>the slope of a line perpendicular to $4x - 5y = 2$?</p>	<p>I have</p> $m = -\frac{5}{4}$ <p>Who has</p> <p>the y-intercept of the line $x - 7y = 4$?</p>	<p>I have</p> <p>Who has</p>

<p>I have 4.6×10^2.</p> <p>Who has 3200?</p>	<p>I have 3.2×10^3.</p> <p>Who has 266,000?</p>
<p>I have 2.66×10^5.</p> <p>Who has 4.9×10^4?</p>	<p>I have 49,000.</p> <p>Who has 1.5×10^{-3}?</p>
<p>I have 0.0015</p> <p>Who has 8.3×10^{-5}?</p>	<p>I have 0.000083.</p> <p>Who has 2.61×10^{-4}?</p>
<p>I have 0.000261.</p> <p>Who has 0.051?</p>	<p>I have 5.1×10^{-2}.</p> <p>Who has 50,370?</p>

<p>I have 467,000.</p> <p>Who has 780?</p>	<p>I have 7.8×10^2.</p> <p>Who has 5.6×10^{-3}?</p>
<p>I have 0.0056.</p> <p>Who has 10,200?</p>	<p>I have 1.02×10^4.</p> <p>Who has 1.56×10^8?</p>
<p>I have 156,000,000.</p> <p>Who has 0.000000843?</p>	<p>I have 8.43×10^{-7}.</p> <p>Who has 520?</p>
<p>I have 5.2×10^2.</p> <p>Who has 57,900,000?</p>	<p>I have 5.79×10^7.</p> <p>Who has 4.76×10^3?</p>

I have 1.56×10^8 . Who has 9.83×10^4 ?	I have 98,300. Who has 704,600?
I have 7.046×10^5 . Who has 5.21×10^6 ?	I have 5,210,000. Who has 432,700,000?
I have 4.327×10^8 . Who has 0.00183?	I have 1.83×10^{-3} . Who has 7.92×10^2 ?
I have 792. Who has 841,000?	I have 8.41×10^5 . Who has 460?

<p>I have 4760.</p> <p>Who has 763?</p>	<p>I have 7.63×10^2.</p> <p>Who has 8047?</p>
<p>I have 8.047×10^3.</p> <p>Who has 9,636,000?</p>	<p>I have 9.636×10^6.</p> <p>Who has 8.703×10^6?</p>
<p>I have 8,703,000.</p> <p>Who has 3,201?</p>	<p>I have 3.201×10^3.</p> <p>Who has 0.02000?</p>
<p>I have 2×10^{-2}.</p> <p>Who has 2.16×10^{-1}?</p>	<p>I have 0.216.</p> <p>Who has 156,000,000?</p>

I have 5.037×10^4 . Who has 68,040,000?	I have 6.804×10^7 . Who has 8.201×10^6 ?
I have 8,201,000. Who has 131,000?	I have 1.31×10^5 . Who has 0.0000000714?
I have 7.14×10^{-8} . Who has 9.16×10^{-6} ?	I have 0.00000916. Who has 610,000?
I have 6.1×10^5 . Who has 325?	I have 3.25×10^2 . Who has 4.67×10^5 ?

I HAVE - WHO HAS

I HAVE	WHO HAS	I HAVE	WHO HAS
1. 4.6×10^2	3200	22. 8.43×10^{-7}	520
2. 3.2×10^3	266,000	23. 5.2×10^2	57,900,000
3. 2.66×10^5	4.9×10^4	24. 5.79×10^7	4.76×10^3
4. 49,000	1.5×10^{-3}	25. 4760	763
5. 0.0015	8.3×10^{-5}	26. 7.63×10^2	8047
6. 0.000083	2.61×10^{-4}	27. 8.047×10^3	9,636,000
7. 0.000261	0.051	28. 9.636×10^6	8.703×10^6
8. 5.1×10^{-2}	50,370	29. 8,703,000	3,201
9. 5.037×10^4	68,040,000	30. 3.201×10^3	0.02000
10. 6.804×10^7	8.201×10^6	31. 2×10^{-2}	2.16×10^{-1}
11. 8,201,000	131,000	32. 0.216	156,000,000
12. 1.31×10^5	0.0000000714	33. 1.56×10^8	9.83×10^4
13. 7.14×10^{-8}	9.16×10^{-6}	34. 98,300	704,600
14. 0.00000916	610,000	35. 7.046×10^5	5.21×10^6
15. 6.1×10^5	325	36. 5,210,000	432,700,000
16. 3.25×10^2	4.67×10^5	37. 4.327×10^8	0.00183
17. 467,000	780	38. 1.83×10^{-3}	7.92×10^2
18. 7.8×10^2	5.6×10^{-3}	39. 792	841,000
19. 0.0056	10,200	40. 8.41×10^5	460
20. 1.02×10^4	1.56×10^8		
21. 156,000,000	0.000000843		

<p>I have</p> <p>Who has</p>	<p>I have</p> <p>Who has</p>	<p>I have</p> <p>Who has</p>
<p>I have</p> <p>Who has</p>	<p>I have</p> <p>Who has</p>	<p>I have</p> <p>Who has</p>
<p>I have</p> <p>Who has</p>	<p>I have</p> <p>Who has</p>	<p>I have</p> <p>Who has</p>

<p>I have</p> <p>Who has</p>	<p>I have</p> <p>Who has</p>	<p>I have</p> <p>Who has</p>
<p>I have</p> <p>Who has</p>	<p>I have</p> <p>Who has</p>	<p>I have</p> <p>Who has</p>
<p>I have</p> <p>Who has</p>	<p>I have</p> <p>Who has</p>	<p>I have</p> <p>Who has</p>

I Have . . . Who Has . . . ? Cards

<p>I HAVE $x^2 - 36.$ WHO HAS $(x + 2)(x + 7)?$</p>	<p>I HAVE $x^2 + 9x + 14.$ WHO HAS $(x + 9)(x - 5)?$</p>
<p>I HAVE $x^2 + 4x - 45.$ WHO HAS $(x + 1)(x + 1)?$</p>	<p>I HAVE $x^2 + 2x + 1.$ WHO HAS $(x + 9)(x + 9)?$</p>
<p>I HAVE $x^2 + 18x + 81.$ WHO HAS $(x + 6)(x - 10)?$</p>	<p>I HAVE $x^2 - 4x - 60.$ WHO HAS $(x - 6)(x - 6)?$</p>
<p>I HAVE $x^2 - 12x + 36.$ WHO HAS $(x - 15)(x + 4)?$</p>	<p>I HAVE $x^2 - 11x - 60.$ WHO HAS $(x + 1)(x + 10)?$</p>

<p>I HAVE $x^2 + 14x + 45.$ WHO HAS $(x - 2)(x - 10)?$</p>	<p>I HAVE $x^2 - 12x + 20.$ WHO HAS $(x + 7)(x - 3)?$</p>
<p>I HAVE $x^2 + 4x - 21.$ WHO HAS $(x + 9)(x + 6)?$</p>	<p>I HAVE $x^2 + 15x + 54.$ WHO HAS $(x - 8)(x - 7)?$</p>
<p>I HAVE $x^2 - 15x + 56.$ WHO HAS $(x + 8)(x + 5)?$</p>	<p>I HAVE $x^2 + 13x + 40.$ WHO HAS $(x - 6)(x - 10)?$</p>
<p>I HAVE $x^2 - 16x + 60.$ WHO HAS $(x + 6)(x + 5)?$</p>	<p>I HAVE $x^2 + 11x + 30.$ WHO HAS $(x - 12)(x + 3)?$</p>

I Have . . . Who Has . . . ? Cards

<p>I HAVE $x^2 + 11x - 60.$ WHO HAS $(x + 5)(x + 7)?$</p>	<p>I HAVE $x^2 + 12x + 35.$ WHO HAS $(x + 9)(x - 3)?$</p>
<p>I HAVE $x^2 + 6x - 27.$ WHO HAS $(x + 6)(x + 10)?$</p>	<p>I HAVE $x^2 + 16x + 60.$ WHO HAS $(x - 11)(x + 2)?$</p>
<p>I HAVE $x^2 - 9x - 22.$ WHO HAS $(x - 2)(x - 7)?$</p>	<p>I HAVE $x^2 - 9x + 14.$ WHO HAS $(x + 5)(x - 9)?$</p>
<p>I HAVE $x^2 - 4x - 45.$ WHO HAS $(x + 9)(x + 3)?$</p>	<p>I HAVE $x^2 + 12x + 27.$ WHO HAS $(x - 9)(x - 9)?$</p>

I Have . . . Who Has . . . ? Cards

<p>I HAVE $x^2 - 18x + 81.$ WHO HAS $(x - 10)(x + 1)?$</p>	<p>I HAVE $x^2 - 9x - 10.$ WHO HAS $(x + 12)(x - 3)?$</p>
<p>I HAVE $x^2 + 9x - 36.$ WHO HAS $(x + 7)(x + 7)?$</p>	<p>I HAVE $x^2 + 14x + 49.$ WHO HAS $(x + 2)(x - 6)?$</p>
<p>I HAVE $x^2 - 4x - 12.$ WHO HAS $(x + 11)(x - 3)?$</p>	<p>I HAVE $x^2 + 8x - 33.$ WHO HAS $(x + 8)(x + 4)?$</p>
<p>I HAVE $x^2 + 12x + 32.$ WHO HAS $(x - 15)(x - 4)?$</p>	<p>I HAVE $x^2 - 19x + 60.$ WHO HAS $(x - 6)(x + 6)?$</p>

I Have . . . Who Has . . . ? Cards

<p>I HAVE $x^2 + 11x + 10.$ WHO HAS $(x - 9)(x - 3)?$</p>	<p>I HAVE $x^2 - 12x + 27.$ WHO HAS $(x - 6)(x + 4)?$</p>
<p>I HAVE $x^2 - 2x - 24.$ WHO HAS $(x - 8)(x - 4)?$</p>	<p>I HAVE $x^2 - 12x + 32.$ WHO HAS $(x - 9)(x + 6)?$</p>
<p>I HAVE $x^2 - 3x - 54.$ WHO HAS $(x + 15)(x + 4)?$</p>	<p>I HAVE $x^2 + 19x + 60.$ WHO HAS $(x + 7)(x + 3)?$</p>
<p>I HAVE $x^2 + 10x + 21.$ WHO HAS $(x - 8)(x - 3)?$</p>	<p>I HAVE $x^2 - 11x + 24.$ WHO HAS $(x + 5)(x + 9)?$</p>

I Have . . . Who Has . . . ? Cards

<p>I HAVE $x^2 - 9x - 36.$ WHO HAS $(x - 1)(x - 1)?$</p>	<p>I HAVE $x^2 - 2x + 1.$ WHO HAS $(x + 3)(x + 3)?$</p>
<p>I HAVE $x^2 + 6x + 9.$ WHO HAS $(x - 9)(x + 3)?$</p>	<p>I HAVE $x^2 - 6x - 27.$ WHO HAS $(x - 7)(x + 3)?$</p>
<p>I HAVE $x^2 - 4x - 21.$ WHO HAS $(x - 1)(x + 10)?$</p>	<p>I HAVE $x^2 + 9x - 10.$ WHO HAS $(x - 6)(x - 5)?$</p>
<p>I HAVE $x^2 - 11x + 30.$ WHO HAS $(x - 3)(x - 3)?$</p>	<p>I HAVE $x^2 - 6x + 9.$ WHO HAS $(x + 15)(x - 4)?$</p>

I HAVE . . .

$x^2 - 18x + 81$

$x^2 - 9x - 10$

$x^2 + 9x - 36$

$x^2 + 14x + 49$

$x^2 - 4x - 12$

$x^2 + 8x - 33$

$x^2 + 12x + 32$

$x^2 - 19x + 60$

$x^2 - 36$

$x^2 + 9x + 14$

$x^2 + 4x - 45$

$x^2 + 2x + 1$

$x^2 + 18x + 81$

$x^2 - 4x - 60$

$x^2 - 12x + 36$

$x^2 - 11x - 60$

$x^2 + 11x + 10$

$x^2 - 12x + 27$

$x^2 - 2x - 24$

$x^2 - 12x + 32$

$x^2 - 3x - 54$

$x^2 + 19x + 60$

$x^2 + 10x + 21$

$x^2 - 11x + 24$

$x^2 + 14x + 45$

$x^2 - 12x + 20$

$x^2 + 4x - 21$

$x^2 + 15x + 54$

$x^2 - 15x + 56$

$x^2 + 13x + 40$

$x^2 - 16x + 60$

$x^2 + 11x + 30$

$x^2 - 9x - 36$

$x^2 - 2x + 1$

WHO HAS . . .

$(x - 10)(x + 1)$

$(x + 12)(x - 3)$

$(x + 7)(x + 7)$

$(x + 2)(x - 6)$

$(x + 11)(x - 3)$

$(x + 8)(x + 4)$

$(x - 15)(x - 4)$

$(x - 6)(x + 6)$

$(x + 2)(x + 7)$

$(x + 9)(x - 5)$

$(x + 1)(x + 1)$

$(x + 9)(x + 9)$

$(x + 6)(x - 10)$

$(x - 6)(x - 6)$

$(x - 15)(x + 4)$

$(x + 1)(x + 10)$

$(x - 9)(x - 3)$

$(x - 6)(x + 4)$

$(x - 8)(x - 4)$

$(x - 9)(x + 6)$

$(x + 15)(x + 4)$

$(x + 7)(x + 3)$

$(x - 8)(x - 3)$

$(x + 5)(x + 9)$

$(x - 2)(x - 10)$

$(x + 7)(x - 3)$

$(x + 9)(x + 6)$

$(x - 8)(x - 7)$

$(x + 8)(x + 5)$

$(x - 6)(x - 10)$

$(x + 6)(x + 5)$

$(x - 12)(x + 3)$

$(x - 1)(x - 1)$

$(x + 3)(x + 3)$

I HAVE . . .

$$x^2 + 6x + 9$$

$$x^2 - 6x - 27$$

$$x^2 - 4x - 21$$

$$x^2 + 9x - 10$$

$$x^2 - 11x + 30$$

$$x^2 - 6x + 9$$

$$x^2 + 11x - 60$$

$$x^2 + 12x + 35$$

$$x^2 + 6x - 27$$

$$x^2 + 16x + 60$$

$$x^2 - 9x - 22$$

$$x^2 - 9x + 14$$

$$x^2 - 4x - 45$$

$$x^2 + 12x + 27$$

$$x^2 - 4x - 32$$

$$x^2 - x - 30$$

WHO HAS . . .

$$(x - 9)(x + 3)$$

$$(x - 7)(x + 3)$$

$$(x - 1)(x + 10)$$

$$(x - 6)(x - 5)$$

$$(x - 3)(x - 3)$$

$$(x + 15)(x - 4)$$

$$(x + 5)(x + 7)$$

$$(x + 9)(x - 3)$$

$$(x + 6)(x + 10)$$

$$(x - 11)(x + 2)$$

$$(x - 2)(x - 7)$$

$$(x + 5)(x - 9)$$

$$(x + 9)(x + 3)$$

$$(x - 8)(x + 4)$$

$$(x - 6)(x + 5)$$

$$(x - 9)(x - 9)$$