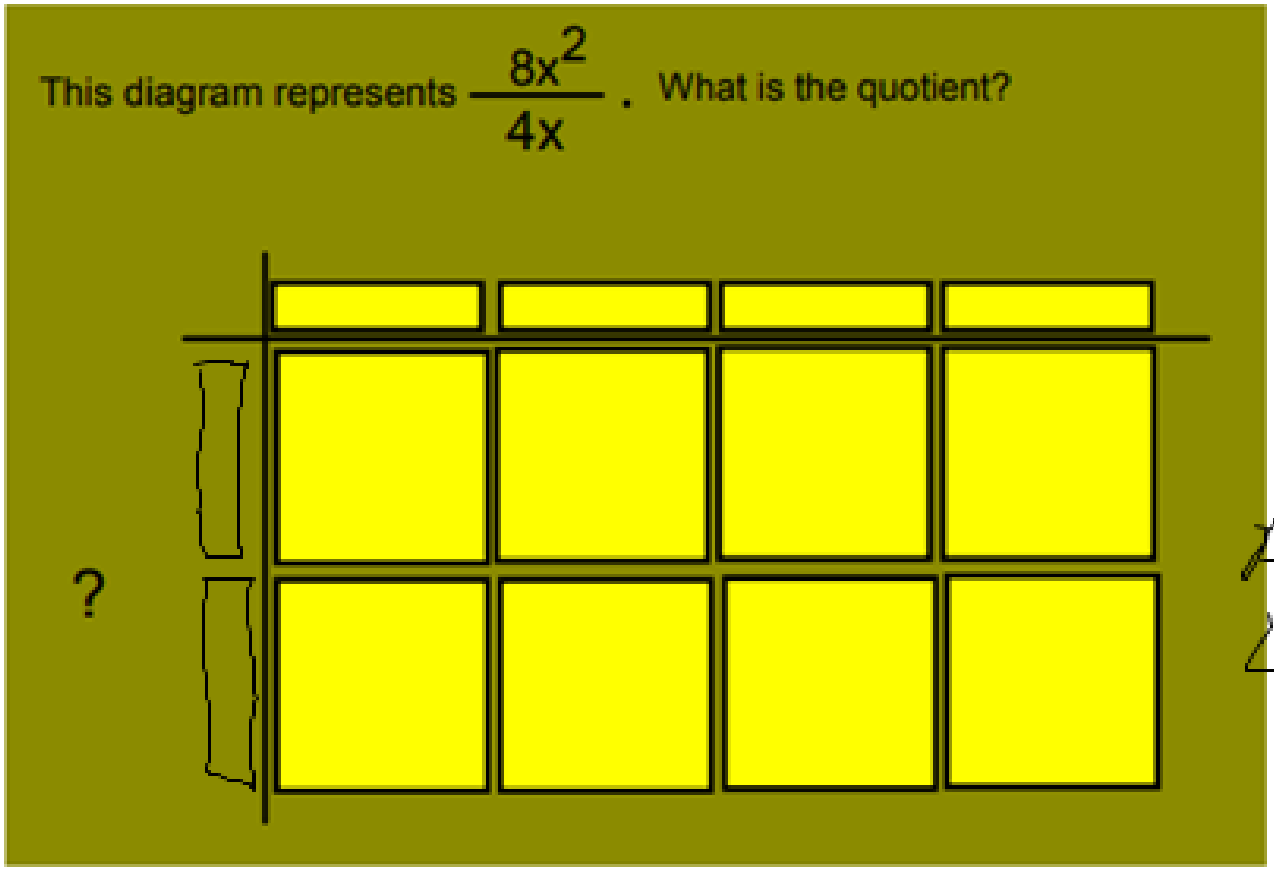
Area ÷ length = width

Area ÷ width = length

This diagram represents $\frac{8x^2}{4x}$. What is the quotient?



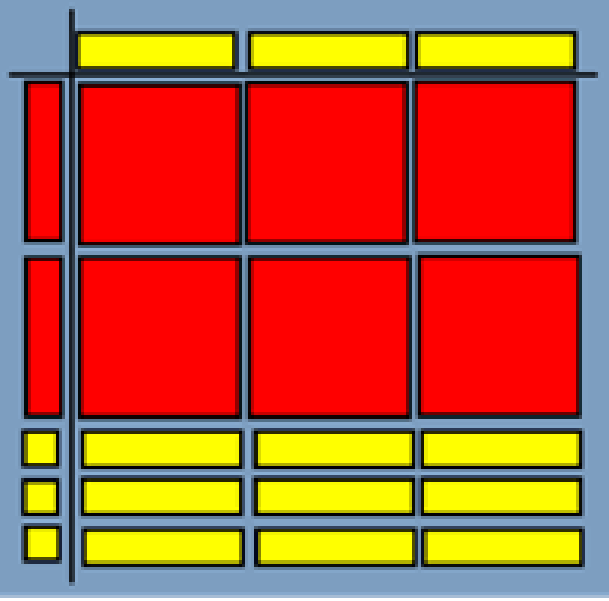
Area = $8x^2$

Length = $4x$

$\frac{8x^2}{4x} = 2x$ (width)

$(-6x^2+9x) \div (3x) = -2x+3$

Ex. Write a division statement for the polynomial below:



OR $(-6x^2+9x) \div (-2x+3) = 3x$

DIVIDING POLYNOMIALS MATHEMATICALLY

Break it up. Everything on top gets divided by bottom

Divide the numbers

Divide letters with like terms using exponent rules (subtract the exponents)

Letters without like terms just stay in the answer the way they are

Exponent Rule: $a^m \div a^n = a^{m-n}$

Ex. $x^6 \div x^2 = x^{6-2} = x^4$

$$\frac{6x^2 - 3xy}{3x} = \frac{6x^2}{3x} - \frac{3xy}{3x} = 2\frac{x^2}{x} - 1\frac{xy}{x} = 2x - 1y$$

ex. $\frac{4x^2 - 44x}{2x}$

ex. $\frac{15r^5y^6 - 25r^2y^5 + 100r^3y^2}{5r^2y^2}$

$\frac{4x^2}{2x} - \frac{44x}{2x}$

$2x - 22$

$\frac{15r^5y^6}{5r^2y^2} - \frac{25r^2y^5}{5r^2y^2} + \frac{100r^3y^2}{5r^2y^2}$

$3r^3y^4 - 5y^3 + 20r$

ex. $\dfrac{12gh + 6g}{2g}$

$\dfrac{12gh}{2g} + \dfrac{6g}{2g}$

$6h + 3$

PRACTICE Pg 255 #5, 10, 11bdfh, 16, 18a, 21
CHALLENGE: 23, 25