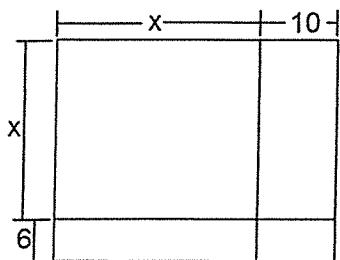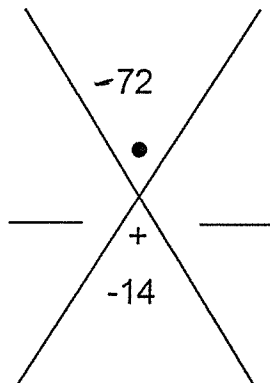1. For the rectangle below write an expression that represents its area.
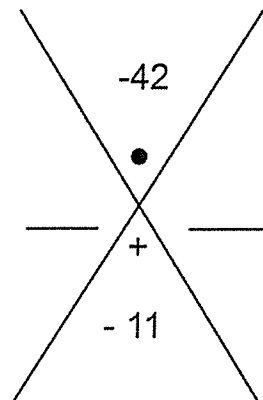
$A =$

For 2 to 4 your job is to find two numbers to put on the left and right side of the X so that they multiply to the number at the top and add to the number at the bottom.

2.

3.

4.

For the remaining problems simplify each expression.

5. $(4m^{-5}n^7p^8q^6)^{-2}(2m^4n^{-8}p^5q^4)^3$

6. $\left(\dfrac{6^{-1}c^{-2}d^5}{2c^9d^{-4}}\right)^{-2}$

1. For the rectangle below write an expression that represents its area.

$A = x^2 + 16x + 60$

For 2 to 4 your job is to find two numbers to put on the left and right side of the X so that they multiply to the number at the top and add to the number at the bottom.
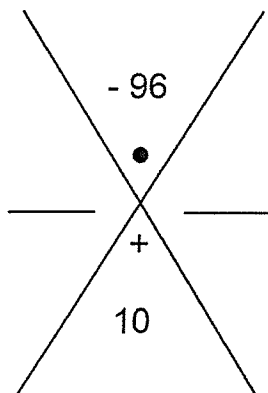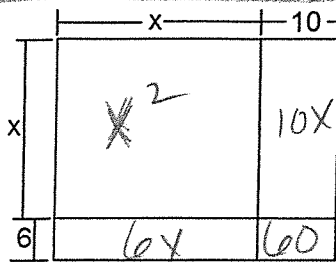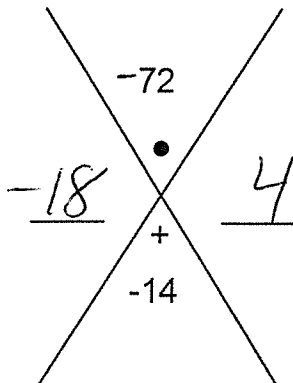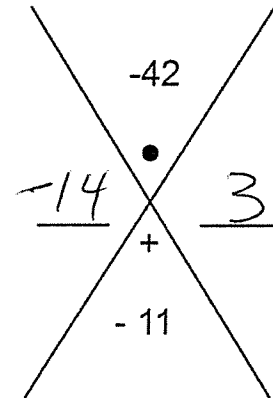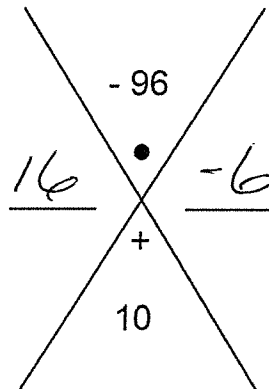
2.

-72

-18 $\quad$ 4

$+$

-14

3.

-42

-14 $\quad$ 3

$+$

-11

4.

-96

16 $\quad$ -6

$+$

10

For the remaining problems simplify each expression.

5. $(4m^{-5}n^7p^8q^6)^{-2}(2m^4n^{-8}p^5q^4)^3$

$$\left(4^{-2}m^{10}n^{-14}p^{-16}\frac{}{q^{-12}}\right)\left(2^3 m^{12}n^{-24}p^{15}\frac{}{q^{12}}\right)$$

$$4^{-2}\cdot 2^3 \cdot m^{22}\cdot n^{-38}p^{-1}q^0$$

$$\frac{8 \ m^{22}}{16 \ n^{38}p}$$

$$= \boxed{\frac{m^{22}}{2n^{38}p}}$$

6. $\left(\dfrac{6^{-1}c^{-2}d^5}{2c^9d^{-4}}\right)^{-2}$

$$\left(\frac{d^5 d^4}{2\cdot 6\cdot c^9\cdot c^2}\right)^{-2}$$

$$\left(\frac{d^9}{12c^{11}}\right)^{-2}$$

$$\left(\frac{12c^{11}}{d^9}\right)^2 = \boxed{\frac{144c^{22}}{d^{18}}}$$