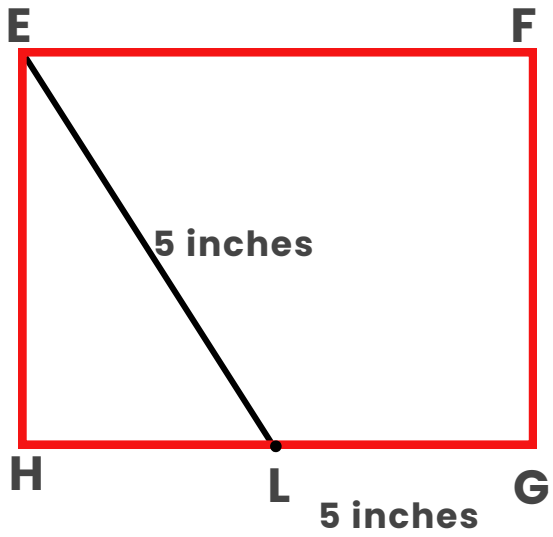
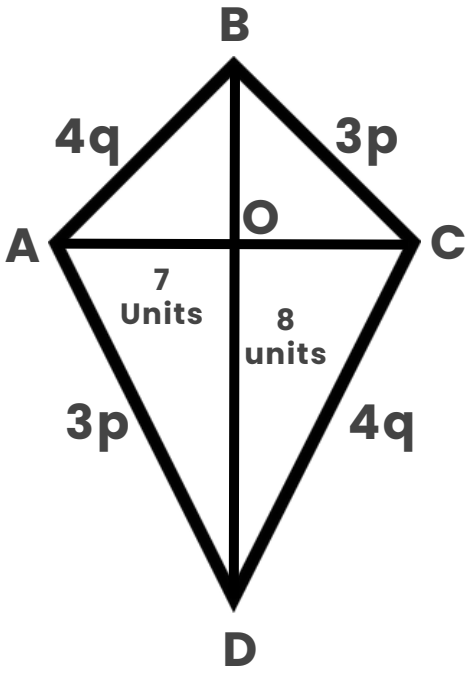
Two-Step Equations Shapes Worksheet

EFGH is a rectangle. Find the length of HG and let it be z



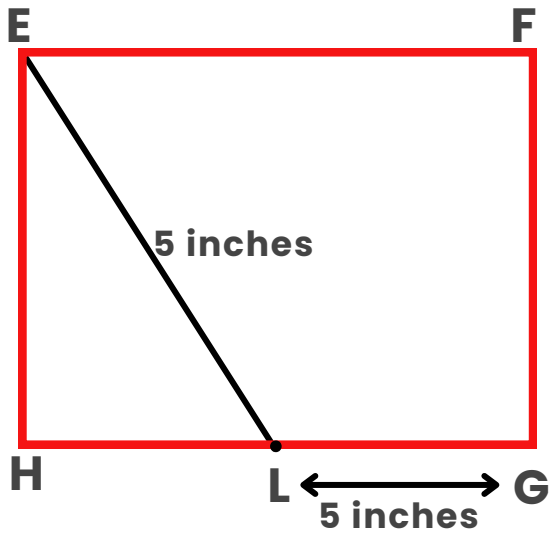
ABCD is a kite. Find the values of p and q.



Two-Step Equations Shapes Worksheet Answer Key

EFGH is a rectangle. Find the length of HG and let it be z

- Given:
- EL=LG=5
- Since L is the midpoint, it divides HG into two equal segments:
- HL=LG=5 inches
- The total length of HG (denoted as z) is the sum of HL and LG: z = HL + LG
- z = 5 in + 5 in
- z = 10 in



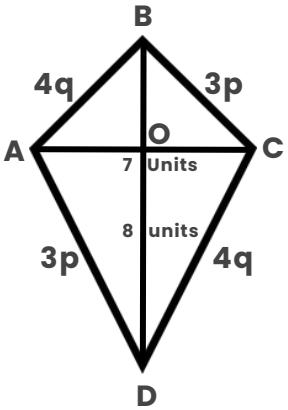
ABCD is a kite. Find the values of p and q.

- OA=3.5 units (half of AC)
- OB=4 units (half of BD)
- AB=4q (side of the kite)

Applying Pythagoras' theorem to triangle AOB

$$(3.5)^2 + (4)^2 = (4q)^2$$
$$12.25 + 16 = 16q^2$$
$$28.25 = 16q^2$$
$$q^2 = \frac{28.25}{16}$$
$$q = \sqrt{\frac{28.25}{16}}$$
$$q = \frac{5.3}{4}$$
$$q = 1.325$$

Triangle COD (using similar logic as above):
OC=3.5 units (half of AC)
OD=4 units (half of BD)
CD=4q = 4 × 1.325 = 5.3 units
This matches with the previous calculation using triangle AOB. Now let's find ppp using the entire diagonal BD and AD or BC.



$AD = 3p, OD = 4$ units (half of BD, already established)

$$(3p)^2 = (4)^2 + (4)^2$$
$$9p^2 = 16 + 16$$
$$9p^2 = 32$$
$$p^2 = \frac{32}{9}$$
$$p = \sqrt{\frac{32}{9}}$$
$$p = \frac{5.656}{3}$$
$$p = 1.885$$