



y is directly proportional to the square of x.

When $y = 32$, $x = 4$. $y \propto x^2$

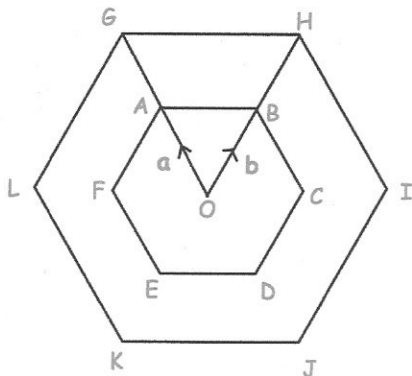
Find the value of y when $x = 8$.

$$y = kx^2$$

$$32 = k \times 4^2 \quad k = 2$$

$$y = 2x^2$$

$$y = 2 \times 8^2 = 128$$



Write down a vector for \overrightarrow{AB}

$$-a + b$$

ABCDEF and GHIJKL are regular hexagons with centre O.
GHIJKL is an enlargement of ABCDEF, with scale factor 2.

Write down a vector for \overrightarrow{FC}

$$-2a + 2b$$

Factorise fully $9y^2 - 144$

$$(3y - 12)(3y + 12)$$

$$9(y - 4)(y + 4)$$

or

$$9(y^2 - 16)$$

$$9(y - 4)(y + 4)$$

Work out the surface area

$$\frac{1}{2}(\pi \times 12) \times 50 = 300\pi$$

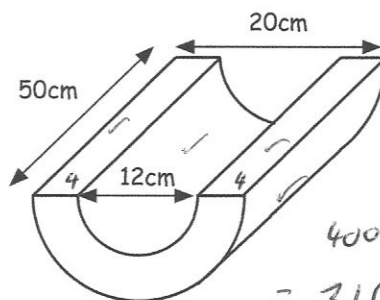
$$\frac{1}{2}(\pi \times 20) \times 50 = 500\pi$$

$$4 \times 50 = 200$$

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$$\frac{1}{2}(\pi \times 10^2 - \pi \times 6^2) \times 2 = 32\pi$$

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$$400 + 864\pi$$

$$= 3114.34 \text{ cm}^2$$