

What's Going On?

Checking In

Minds on

Polynomial Recap

Action!

20 Questions

Consolidation

Perimeter and Area

Learning Goal - I will be able to problem solve with polynomials and equations.

Checking In

Please have your Multiple Choice and Open Response questions from yesterday on your desk for me to collect. DO NOT bring them to the front.

Please have your calculator on your desk for me to see.

Minds on

Polynomial Recap

Please get a whiteboard, eraser, and a marker.

Adding Polynomials

$$2x + 3x \\ = 5x$$

$$3x^2 \times 4x^2$$
$$= 12x^4$$

$$3x + 2y - 1x + 6y$$

$$= 2x$$

$$3x^1y^1 \times 4x^2y^1$$

$$= 12x^3y^2$$

Subtracting Polynomials

$$\begin{aligned} & (8x + 10y) - (3x + 5y) \\ &= \underbrace{8x}_{\text{green}} + 10y - \underbrace{3x}_{\text{green}} - 5y \\ &= 5x + 5y \end{aligned}$$

$$(3x + 5y) - (6x + y)$$

$$= 3x + 5y - 6x - y$$

$$= -3x + 4y$$

$$(-4x - 6y) - (2x - 8y)$$

$$= -4x - 6y - 2x + 8y$$

$$= -6x + 2y$$

Distributive Property

$$3(2x - 4)$$
$$= 6x - 12$$

$$2x(4x+5)$$

$$= 8x^2 + 10x$$

$$3x^2(2x^3 - 5x^1)$$
$$= 6x^5 - 15x^3$$

$$3xy(4x^2y)$$
$$= 12x^3y^2$$

Exponent Laws

$$X^2 \times X^3 = X^5$$

Product
Rule

$$X^6 \div X^4 = X^2$$

Quotient
Rule

$$(X^3)^4 = X^{12}$$

Power of
a Power Rule

$$\frac{\text{Pg 172}}{9e}$$

$$\frac{3f^4g^3 \times 8fg^4}{(6f^2g^3)^2}$$

$$= \frac{24f^5g^7}{36f^4g^6}$$

$$= \frac{2fg}{3} \text{ or } \frac{2}{3}fg$$

What is the value of x in the expression

$$\overset{\text{red arc}}{-2(3x - 1)} = 32$$

$$\begin{array}{r} -6x + 2 = 32 \\ -2 \quad -2 \end{array}$$

$$\begin{array}{r} -6x = 30 \\ \hline -6 \quad -6 \end{array}$$

$$x = -5$$

What completes the expression below?

$$(6x^4)(3x^{12}) = 18x^{16}$$

Which of the following is equivalent to the expression below?

$$(4x - 5) + (2x + 1)$$

- a** $2x - 6$
- b** $2x - 4$
- c** $6x - 6$
- d** $6x - 4$

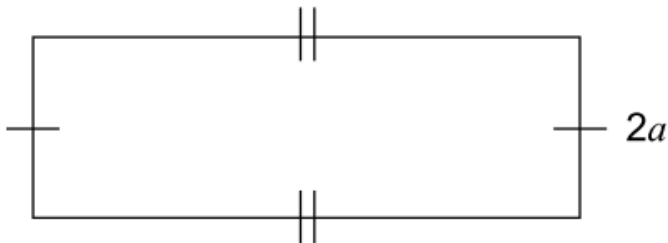
The sum of the perimeters of two shapes is represented by $13x + 4y$.

The perimeter of one shape is represented by $4x - 2y$.

Which expression represents the perimeter of the other shape?

- a** $9x + 2y$
- b** $9x + 6y$
- c** $17x + 2y$
- d** $17x + 6y$

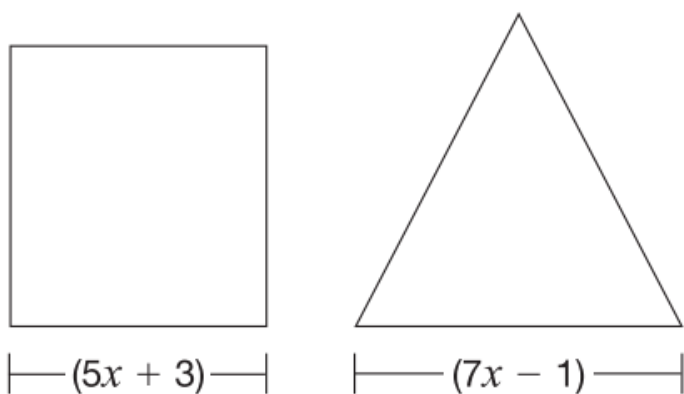
A rectangular field has a **perimeter** of $(10a - 6)$ metres and a width of $2a$ metres.



Which expression represents the **length** of this field?

- A $8a - 6$
- B $12a - 6$
- C $3a - 3$
- D $3a^2 - 3$

A square and an equilateral triangle are pictured below.



If the square and the triangle have the same perimeter, what is the value of x ?

- a 2
- b 4
- c 9
- d 15

Which of the expressions below is equivalent to $3(4x - 5) - 7(9x - 2)$?

a $-51x - 1$

b $-51x - 3$

c $-51x - 7$

d $-51x - 29$

Which of the following is a simplified form of the expression $4(5x - 8) - 3(2x - 7)$?

- a $14x - 11$
- b $14x - 53$
- c $26x - 11$
- d $26x - 53$

Which of the following represents the expression $2(3x + 4) + 3(x - 1)$ in a simplified form?

a $9x + 3$

b $9x + 5$

c $8x + 8$

d $8x + 11$

What is the value of $5x^3y^2$ when $x = 2$ and $y = 4$?

- a 240
- b 320
- c 480
- d 640

Consider the expression below.

$$3x^2(5x^2 - 2x + 1)$$

Which of the following is equivalent to this expression?

- a** $8x^2 - 2x + 1$
- b** $8x^2 + x + 4$
- c** $15x^4 - 2x + 1$
- d** $15x^4 - 6x^3 + 3x^2$

The volume of a rectangular prism is represented by $12x^3$. The height is represented by $3x$.

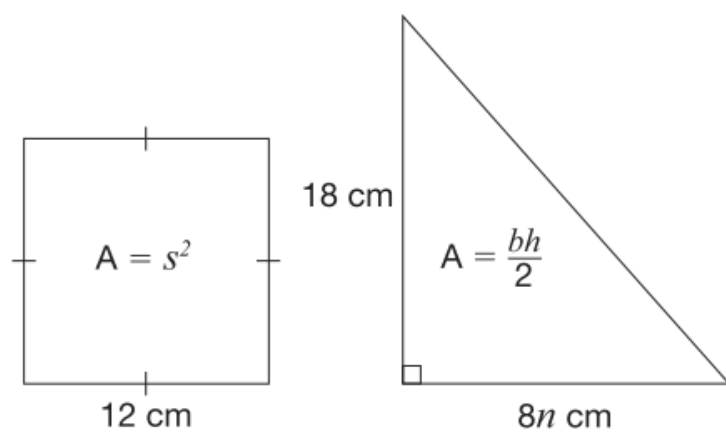
Which of the following represents the area of the base?

Hint:

$$V = (\text{area of base})(\text{height})$$

- a $4x^2$
- b $4x^3$
- c $9x^2$
- d $9x^3$

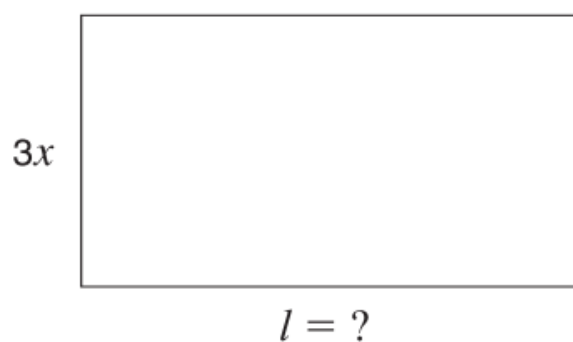
The square and the triangle below have the same area.



What is the value of n ?

- a 1
- b 2
- c 8
- d 16

The area of the rectangle shown below is $6xy^2$ square units.

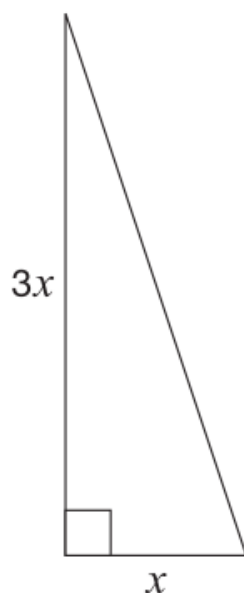


Hint: $A = lw$

If the width is $3x$ units, which expression represents the length of the rectangle?

- a $2xy^2$ units
- b $2y^2$ units
- c $3xy^2$ units
- d $3y^2$ units

Luke designs a garden in the shape of a right triangle as shown below.



The total area of the garden is 96 m^2 .

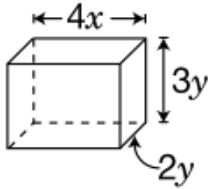
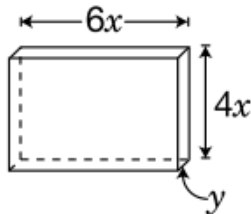
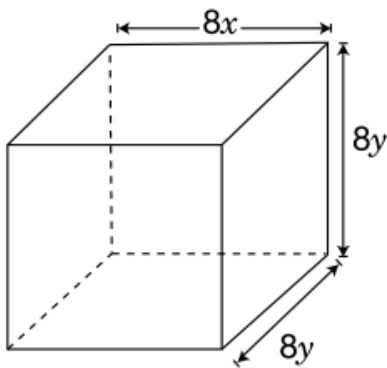
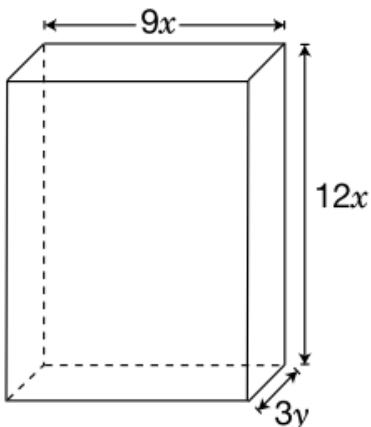
Hint:

$$A = \frac{1}{2}bh$$

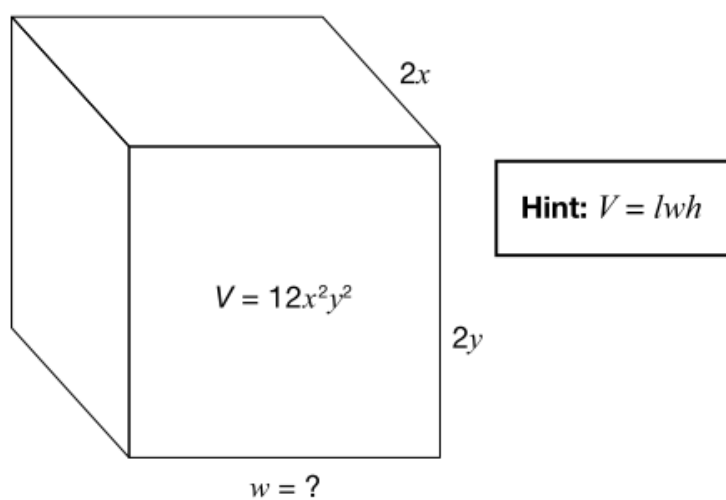
Which is closest to the value of x in the diagram?

- a 6 m
- b 8 m
- c 32 m
- d 64 m

Which of the following fish tanks would contain an amount of water represented by the expression $V = 24x^2y$ when completely full?

A**B****C****D**

A box with a volume of $12x^2y^2$ is shown below.



What is the width of the box?

- a $2xy$
- b $3xy$
- c $4x^3y^3$
- d $8x^3y^3$

What exponent goes in the box to make the following equation true?

$$\frac{x^{\square}x^6}{x^2} = x^{12}$$

- a 9
- b 8
- c 4
- d 3

1 What is the value of the expression x^2 when $x = \frac{4}{5}$?

a $\frac{8}{5}$

b $\frac{8}{10}$

c $\frac{16}{5}$

d $\frac{16}{25}$

2 What is the value of $6x^2$ when $x = \frac{1}{3}$?

a $\frac{2}{9}$

b $\frac{2}{3}$

c 2

d 4

3 What is the value of $(x^2)^3$ when $x = \frac{1}{2}$?

a $\frac{1}{4}$

b $\frac{1}{12}$

c $\frac{1}{32}$

d $\frac{1}{64}$

What value of m makes the equation $\frac{6a^m}{2a^3} = 3a^5$ true?

- a 2
- b 8
- c 15
- d 18

The expression below can be simplified.

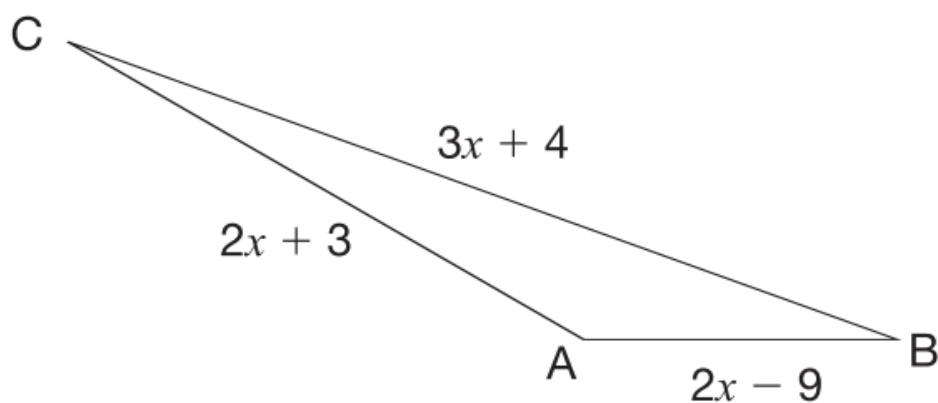
$$\frac{(x^2y)^3}{(xy)^2}$$

Which of the following shows the expression in its simplest form?

- a x^4y
- b x^4
- c xy
- d x^3y

What Side?

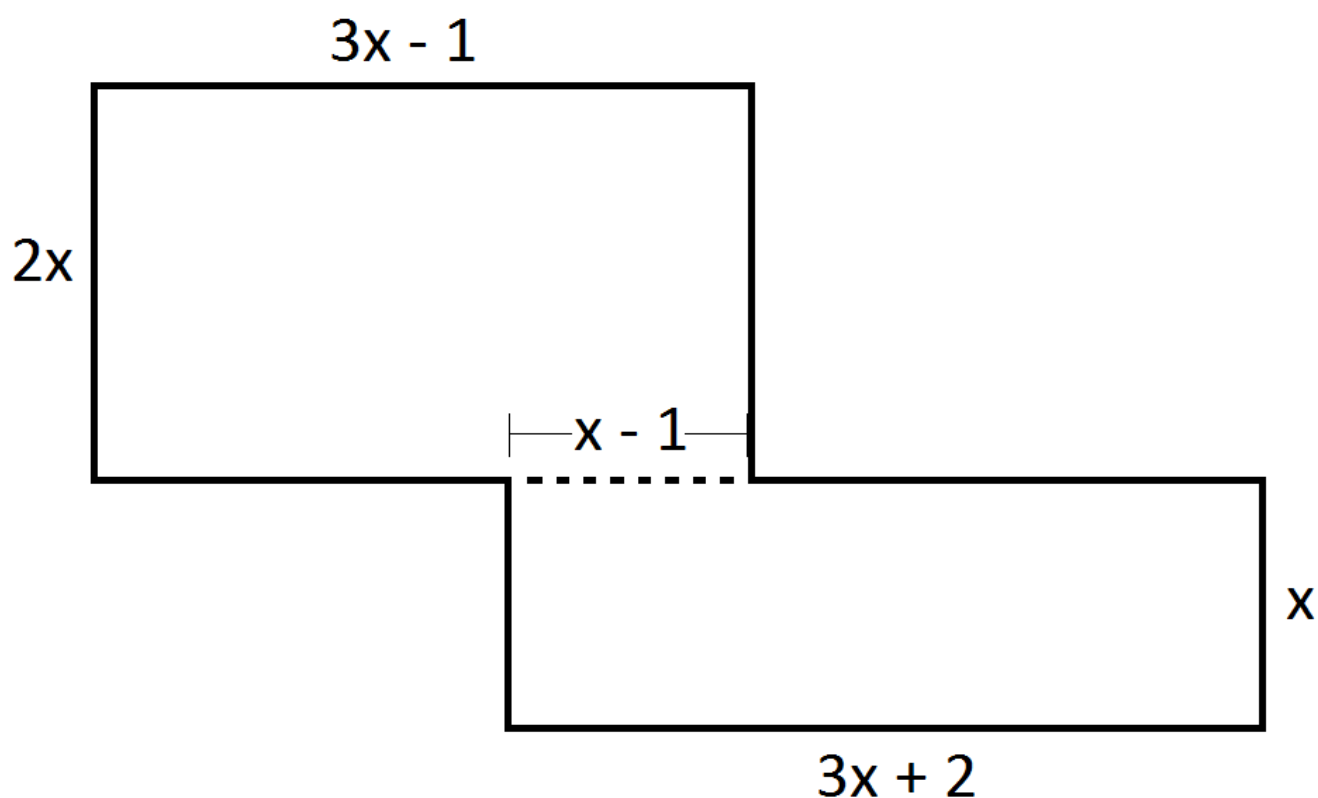
The perimeter of the triangle below is 75 m.



Determine the measure of each side of the triangle.

Show your work.

Perimeter and Area



Determine a simplified expression for the area of the figure above.

Bonus: Do the same for the perimeter!