

MPM2D

Factoring Applications

- The area of a square can be represented by the trinomial $4b^2 + 20ab + 25a^2$. What are the expressions for the dimensions of the square? Sketch a diagram.
- The area of an ultimate Frisbee field can be represented by the trinomial $2m^2 - 9m + 4$.
 - Determine the expressions that represent the dimensions of the field.
 - If m represents 15 m how long, in minutes, would it take to jog around the field if you were jogging at speed of 2 meter/sec?
- Three consecutive numbers when multiplied together have a product that can be represented by the trinomial $2x^2 + 6x + 4$. Factor the expression and determine an expression the three consecutive numbers. What is the product?
- The area of a living room can be represented by the trinomial $m^2 + 11m + 24$.
 - Determine the expressions for the dimensions of the room.
 - If m represents 2 meters how many meters of border are required trace the room?
- The volume of a rectangular prism can be represented by $4x^3 - 18x^2 - 10x$.
 - Determine the expressions that represent the length of each dimension.
 - Could x represent 3 cm? Explain your answer.
 - What are the possible values of x ?
 - Determine the expression for the surface area of the cube.
- The volume of a pyramid, in cubic meters, can be represented by the trinomial $2x^2 + 22x + 36$.
Find the expressions for the dimensions. Recall $A_{pyramid} = \frac{lwh}{3}$
- A circle has an area of $(16\pi x^2 + 24\pi x + 9\pi)$ square centimeters, where x is a positive integer. Determine an expression for the diameter.

Answers:

- $length (2b+5a)$ $width (2b+5a)$
- a) $length (2m-1)$ $width (m-4)$ b) 2.25 min
- Integers 2,3,4 product 24
- a) $length (m+8)$ $width (m+3)$ b) 50 m
- a) $length (2x+1)$ $width (x-5)$ $height 2x$ b) no, the volume would be negative c) $x > 5$ d) $20x^2 - 12x$
- $length (x+9)$ $width (x+2)$ $height 6$
- $8x+6$