

The average temperature during **10 days** in March is given by the expression

$$\frac{6(-2) - 5 + 3(-1)}{10}$$

Evaluate the expression.

Simplify the following expression:

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

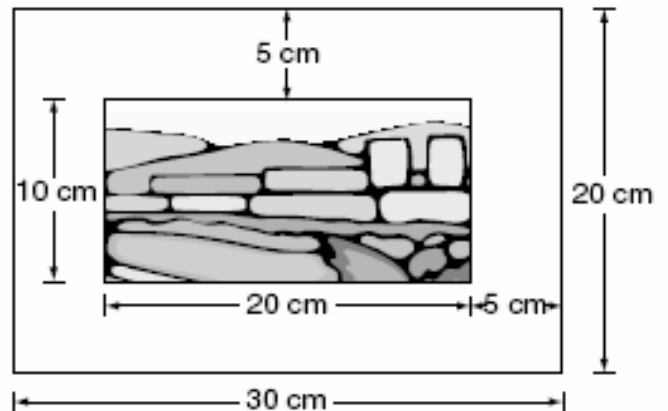
While experimenting with a toy rocket, Dan determines that he can model the rocket's height, h , in metres, with respect to time, t , in seconds, using the equation

$$h = \frac{1}{2}t^2$$



Determine the value of h when t is 20.

A frame around a photograph is 5 cm wide. What **percentage** of the entire area is the frame?



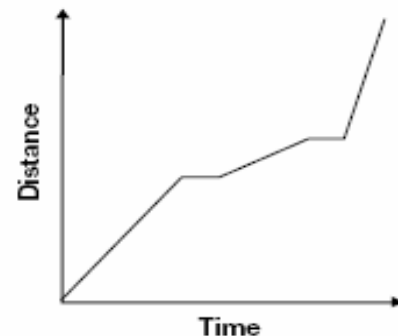
Inez created the following table of values based on a relationship between x and y and calculated the first differences. The values of y have been concealed.

x	y	First differences
11		-3
12		-3
13		-3
14		-3

Write a statement to describe the relationship between x and y .

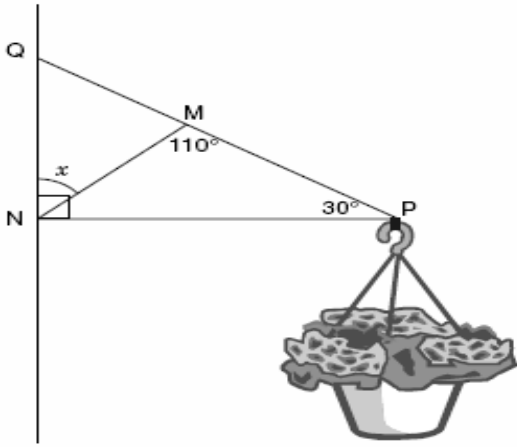
The graph below shows a runner's **distance** from the starting point of a race over time.

Distance vs. Time



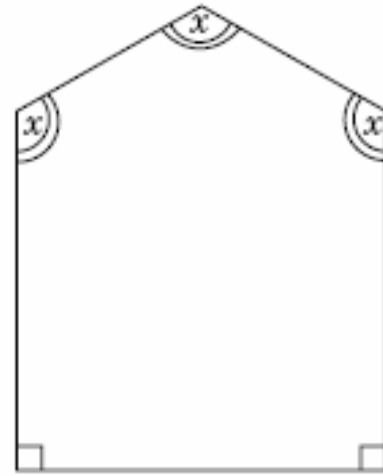
Briefly describe the runner's run.

A flowerpot hangs from a brace. $\triangle MNQ$ and $\triangle MNP$ form the brace.

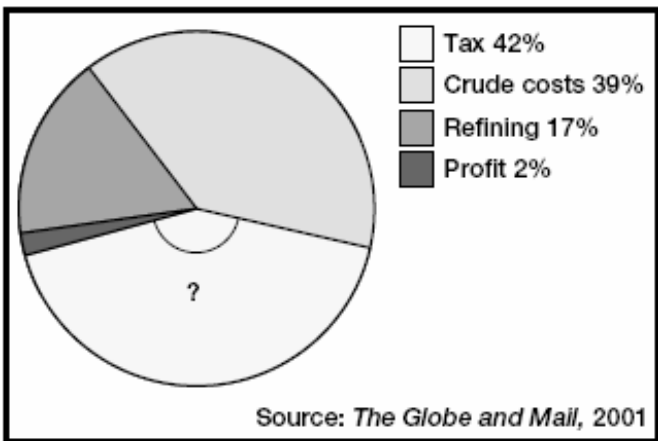


What is the value of x ?

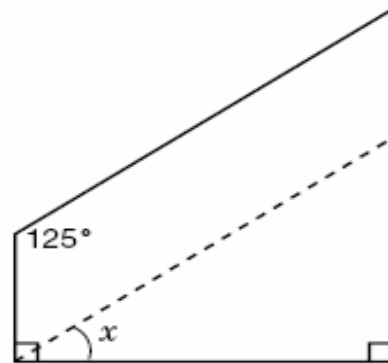
What is the measure of x ?



The circle graph shows the breakdown of the price of gasoline in Ontario in 2001. What is the approximate measure of the marked angle?



Teresa needs to cut a piece of wood in order to make a parallelogram. She marks a line on the wood where she will cut.



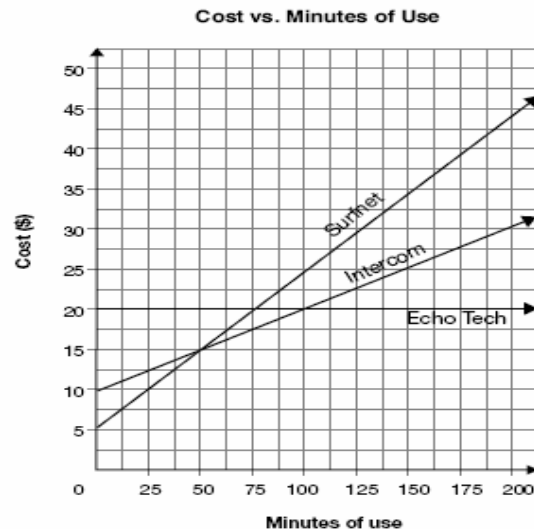
What is the size of angle x ?

At Store A, a computer is regularly priced at \$1299.00. It is on sale for 20% off the regular price.

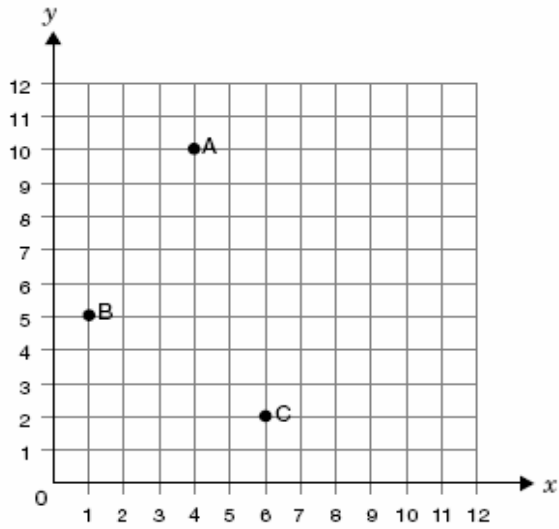
At Store B, the same computer is regularly priced at \$1549.00. It is on sale for 30% off the regular price.

a) Which store offers the lower sale price?

b) How much less will that store's price be than the other store's?



Determine which company Tenisha should sign up with. Include details about minutes of use in your explanation.

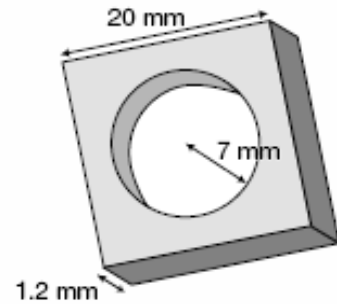


ABCD is a square. Three vertices are A(4, 10), B(1, 5) and C(6, 2). Draw the fourth vertex, D, on the graph below.

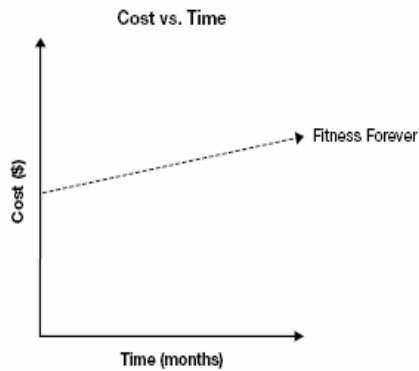
State the coordinates of D.

Determine the volume of a square nut with the dimensions shown.

The length and width of the nut are both 20 mm.
The radius of the hole is 7 mm.
The depth of the nut is 1.2 mm.



The Fitness Forever gym charges a one-time membership fee plus a monthly fee. The Heavy Lifters gym charges a lower membership fee than Fitness Forever and the same monthly fee.



Sketch a possible cost vs. time graph for a Heavy Lifters member on the same set of axes.

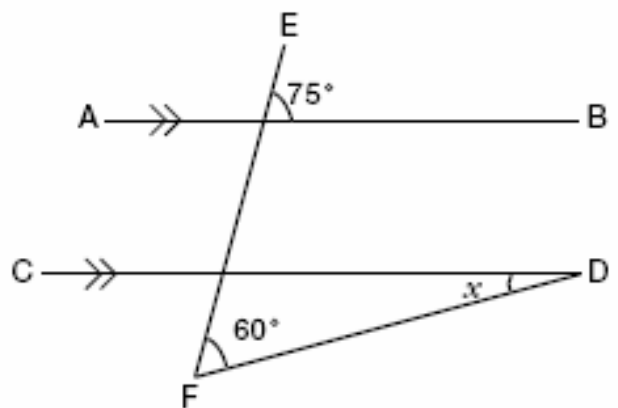
Given A (2, 5) and B (6, 5), determine the slope of the line AB.

A ball is dropped from a height of 10 m above the ground. It bounces to **90% of its previous height** on each bounce.

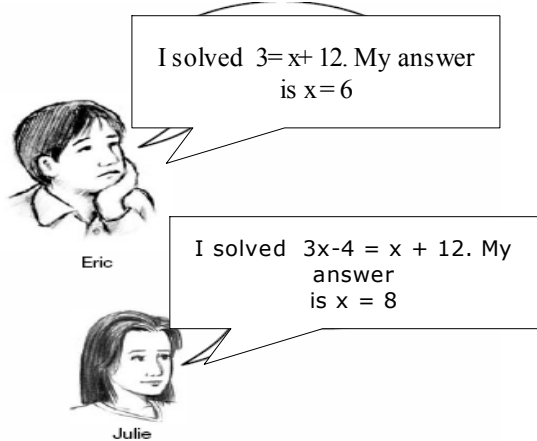


What is the approximate height that the ball bounces to on the **fourth** bounce?

What is the value of x ?



Eric and Julie are each asked to solve an equation. Who has correctly solved his or her equation?

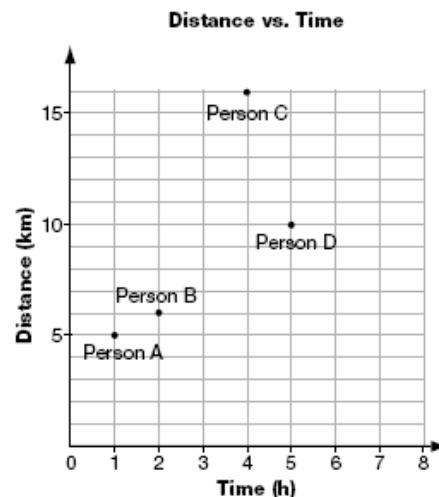


Eric: I solved $3 = x + 12$. My answer is $x = 6$

Julie: I solved $3x - 4 = x + 12$. My answer is $x = 8$

The graph below shows the distance travelled by four people in a walkathon and the time they take.

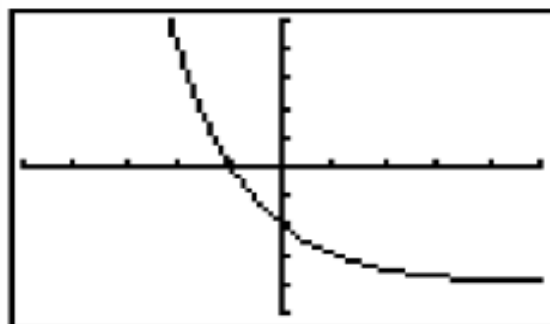
Which person walks at the greatest average speed?



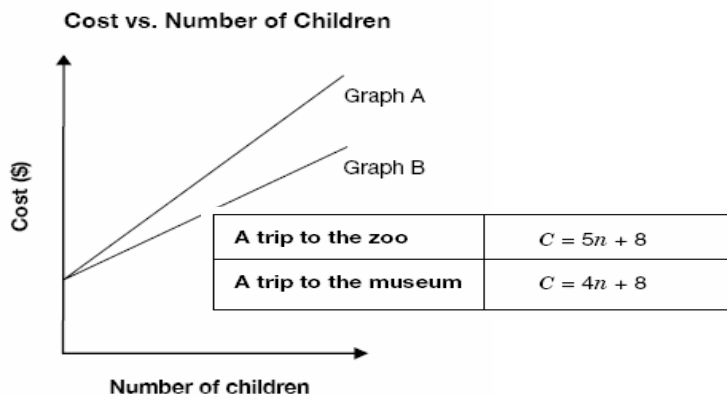
Simplify the following algebraic expression:

$$\frac{a^6 b^4}{a^2 b}$$

Describe the change in y as x increases.



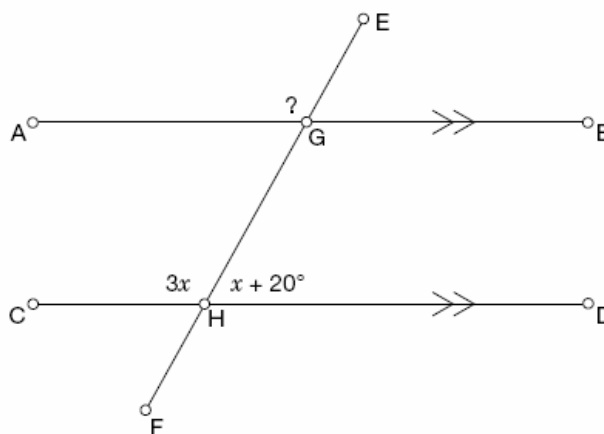
Amina is going to take some children to the zoo or to the museum. The following equations represent the total cost of each trip, where C is the total cost, in dollars, and n is the number of children.



Which graph represents the total cost of a trip to the **zoo**?

In the diagram below, solve for x

- $\angle DHG = x + 20^\circ$
- $\angle GHC = 3x$
- $AB \parallel CD$



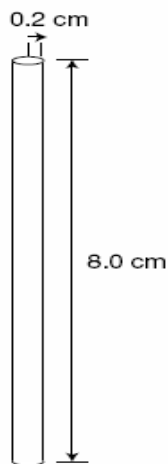
Expand and simplify.

$$2(3x^2 - 5x) + 4x(7 + x)$$

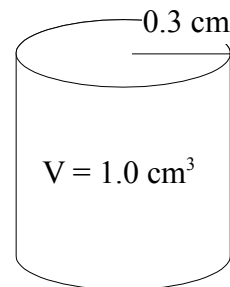
Calculate the **surface area** of one **spherical** cheese bit with a **radius** of **0.8 cm**.



Calculate the **surface area** of a **cylindrical** pretzel with a **radius** of **0.2 cm** and a **height** of **8.0 cm**.



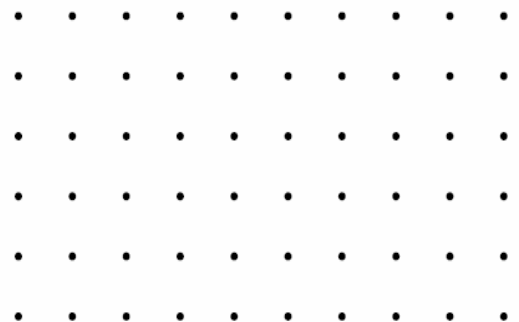
Calculate the **height** of a **cylinder** with a **radius** of **0.3 cm** and a **volume** of **1.0 cm³**.



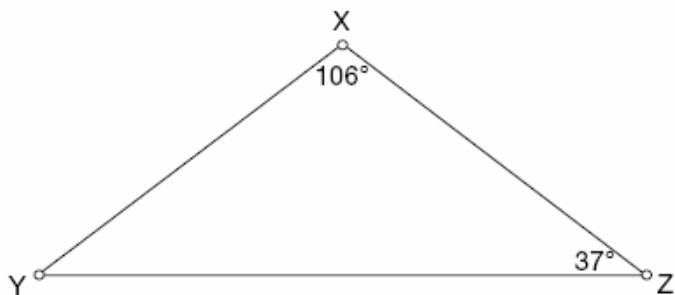
Solve the following equation.

$$3(2x - 9) - 4x = 13$$

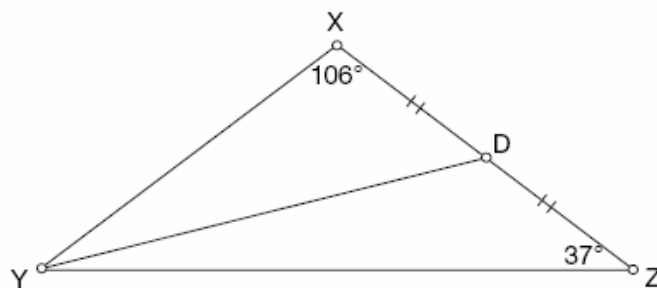
Draw a **quadrilateral** that has **perpendicular diagonals** but is **not** a parallelogram.



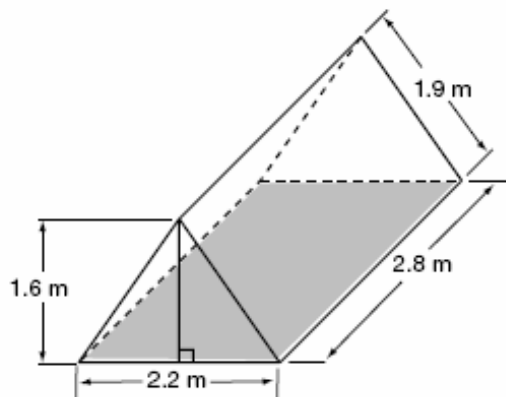
What **type of triangle** is $\triangle XYZ$?



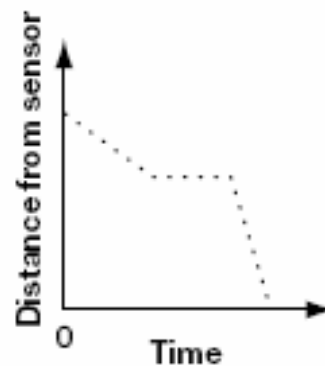
Line segment YD is a **median** from vertex Y. Draw the other **two medians** in the triangle and label the **point of intersection**



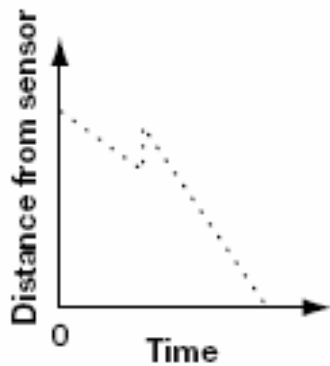
The figure below shows the dimensions of a tent. What is the total area of the walls on the **two sides** and the **two ends**, correct to the nearest square metre?



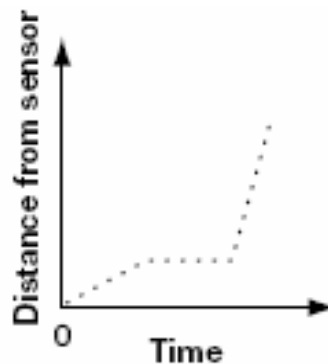
Briefly describe the following walk.



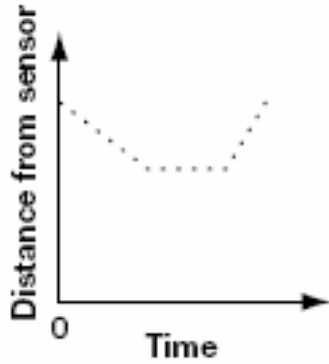
Briefly describe the following walk.



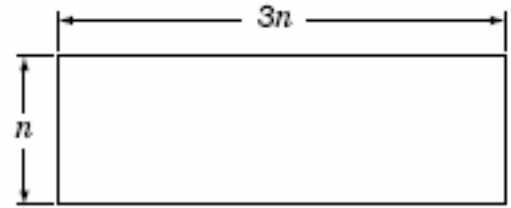
Briefly describe the following walk.



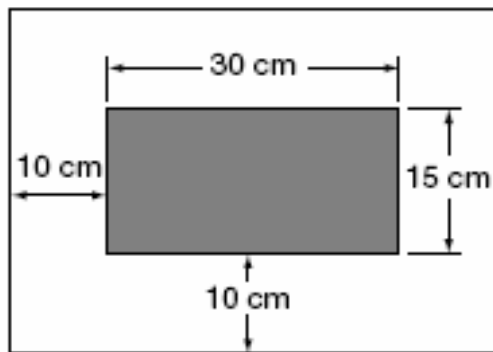
Briefly describe the following walk.



If the perimeter of this rectangle is 120 units, what is its area in square units?

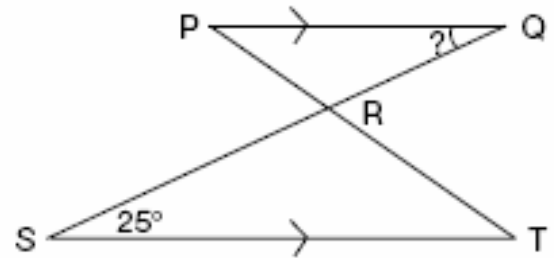


A picture measures 30 cm by 15 cm. The mat around the picture is 10 cm wide as shown.



Find the area of the mat.

If PQ is parallel to ST, what is the measure of $\angle PQR$?



The relationship between the distance, d , in kilometres, travelled by a person on a bicycle and the time, t , in hours, is

$$d = 25t$$

Determine the time it will take to travel 140 km.

Simplify the following expression.

$$(x^2 + 4x + 3) + x(3 - x)$$

The height of 6 students in a certain class are:

154 cm, 155 cm, 155 cm, 165 cm,
170 cm, 185 cm

Determine the mean height.

Simplify.

$$5(2x - 3) - 2(4x + 5)$$

Simplify.

$$3(4x - 5) - (1 - 4x)$$

Solve for x .

$$3x - 5 = 4x + 7$$

Identify the errors in the following solution then solve the problem correctly.

Solution: $5(2x - 3) - 2(4x + 5) = 10x - 3 - 8x + 5$
 $= 2x + 2$
 $= 2x$

Identify the errors in the following solution then solve the problem correctly.

Solution: $3(4x - 5) - (1 - 4x) = 12x - 15 - 1 + 4x$
 $= 16x - 14$
 $= 2x$

