

unit 7

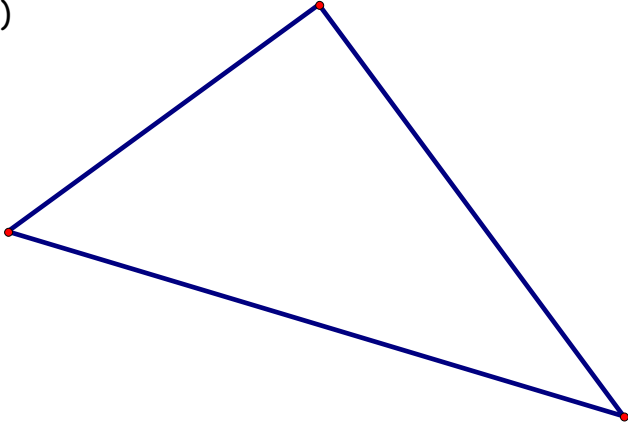
2 dimensional
measurement

7-1 Perimeter

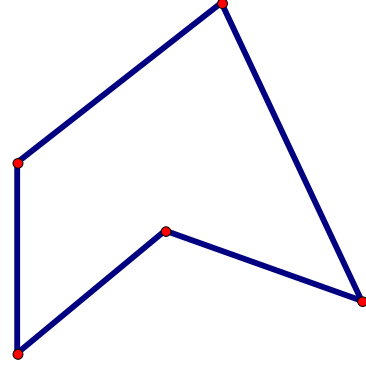
7-1 Perimeter

1. Use a ruler to find the perimeter of each shape.

a)

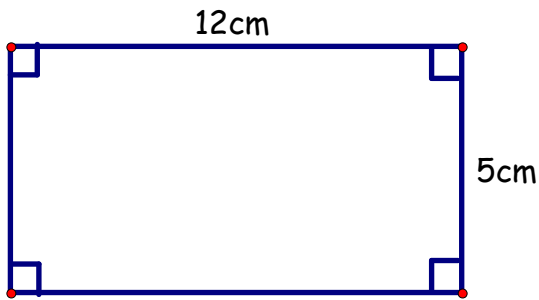


b)

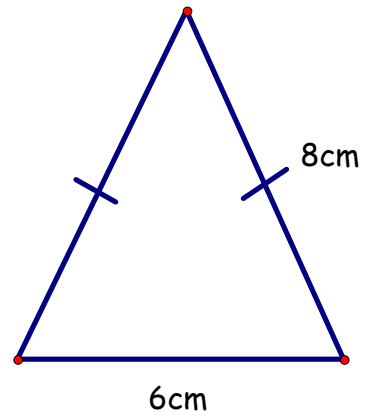


2. Find the perimeter of each shape. (Diagrams are not drawn to scale.)

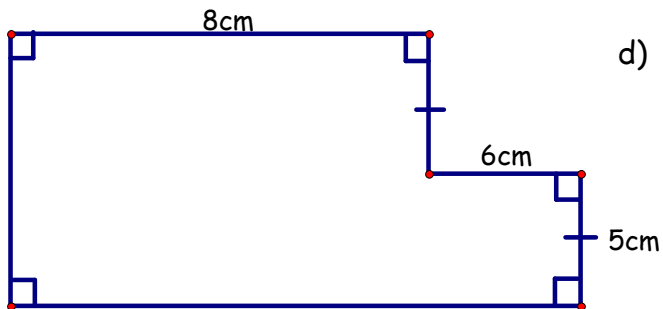
a)



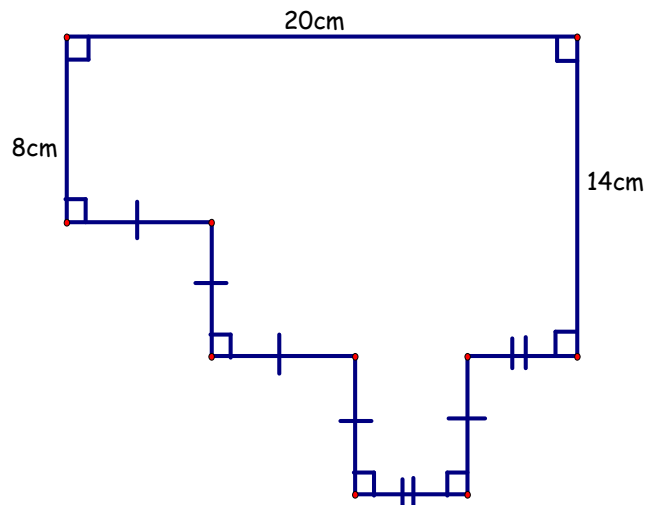
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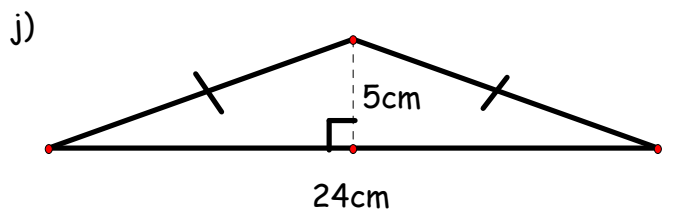
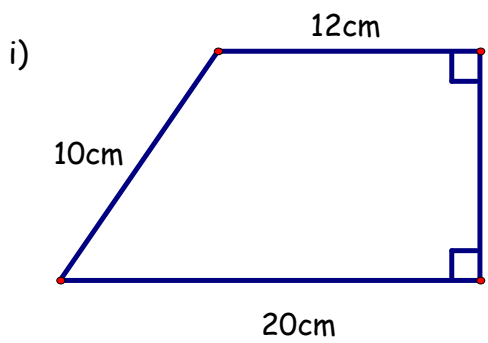
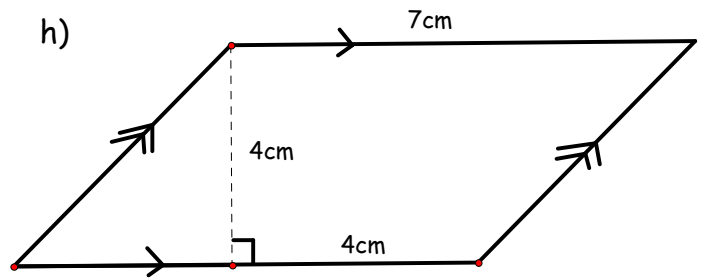
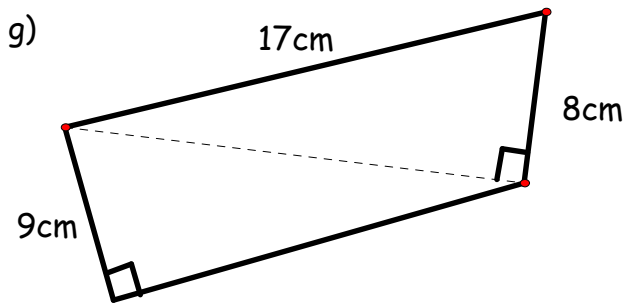
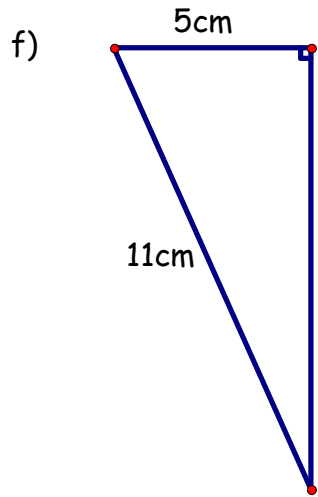
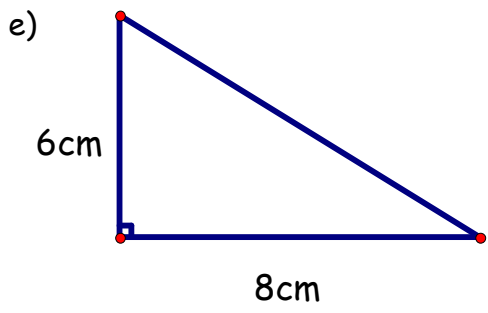


c)



d)





3. The perimeter of a rectangle is 26cm, while the base is 6cm. What is the height of the rectangle?

4. The base of a rectangle is 3cm more than twice the height. If the perimeter of the rectangle is 72cm, find the base and height of the rectangle.

5. Two sides of an equilateral triangle are " $3x$ " m and " $x + 24$ " m respectively. Find the perimeter of the triangle.

6. An isosceles triangle is a triangle in which two of the sides are equal. If each of the equal sides of an isosceles triangle is 5 times the third side and the perimeter of the triangle is 99 inches, how many inches is each of the sides of the triangle?

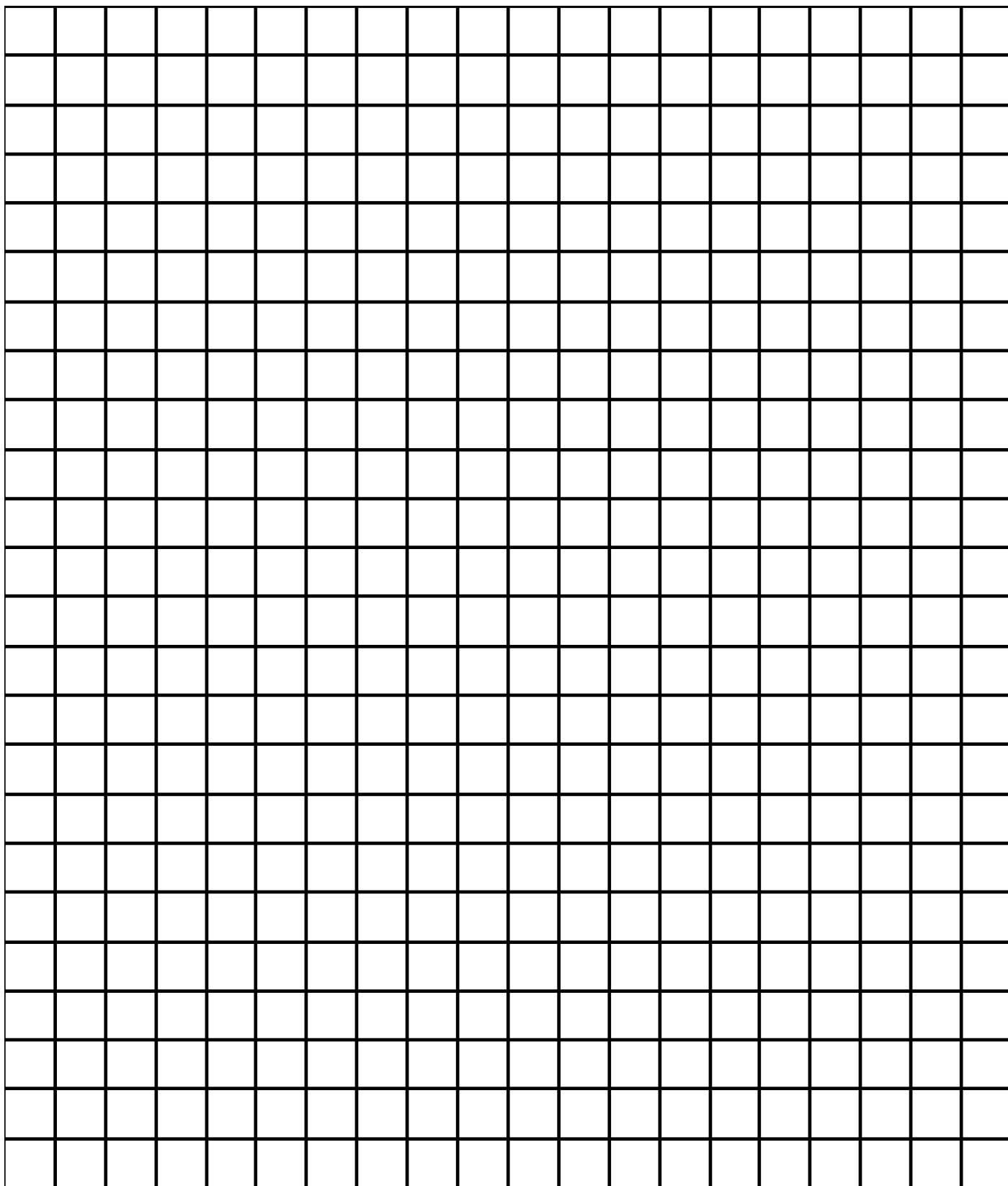
7. A rectangle has a height of 8mm and a diagonal of 10mm. What is the perimeter of this rectangle?

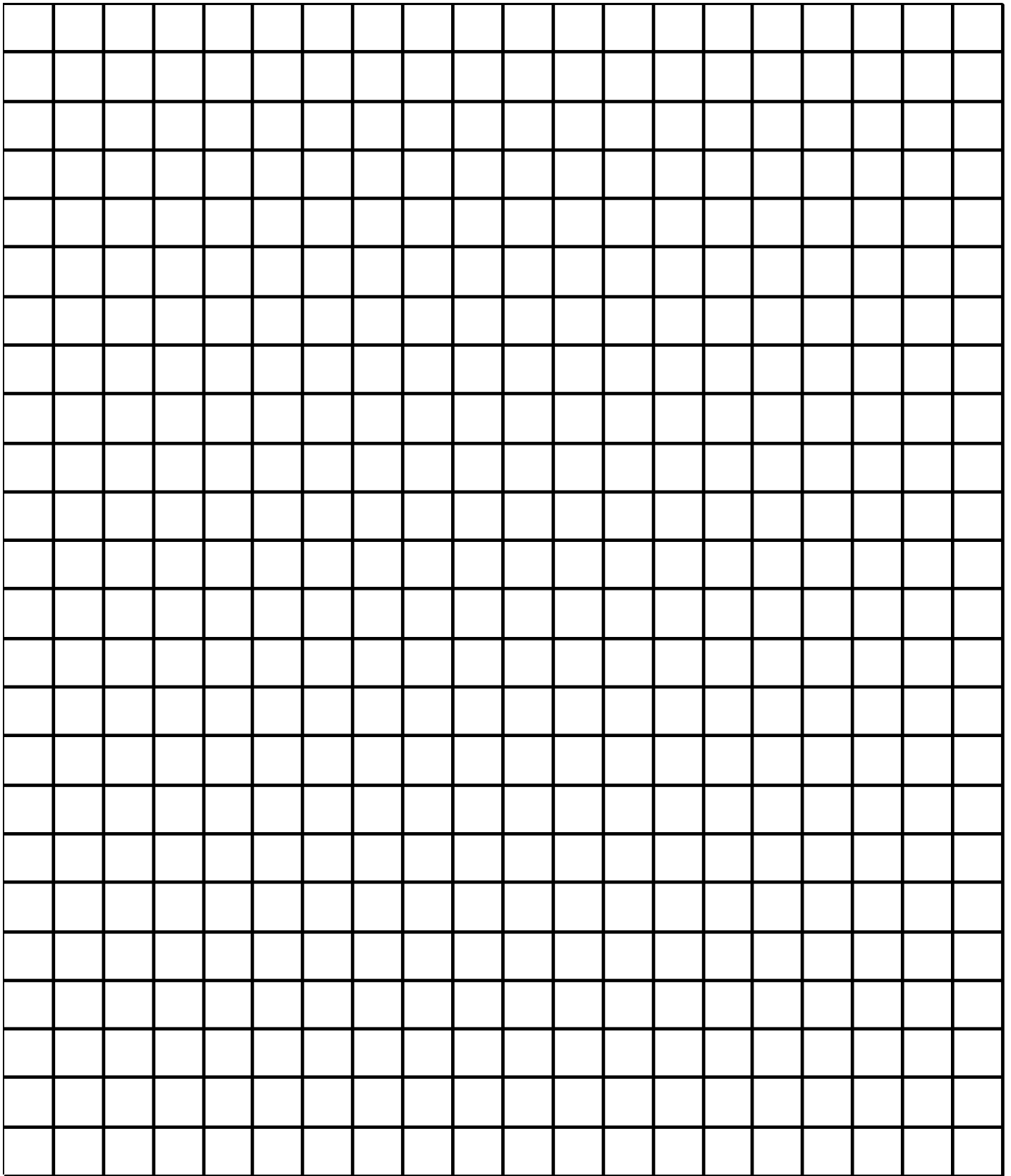
8. The perimeter of a square is 32cm. Find the length of the diagonal.

9. Fill in the table. Each shape is regular (all equal sides and equal angles).

Name	# of Sides	Side Length	Perimeter
Triangle	3	6cm	
	8	4cm	
Pentagon		7cm	
Heptagon			84cm
		12cm	48cm
	6		54cm
Decagon			72cm
		20cm	180cm

7-2 Area



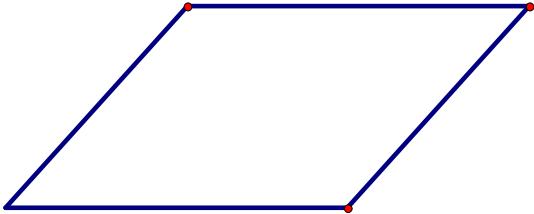


7-2 Area

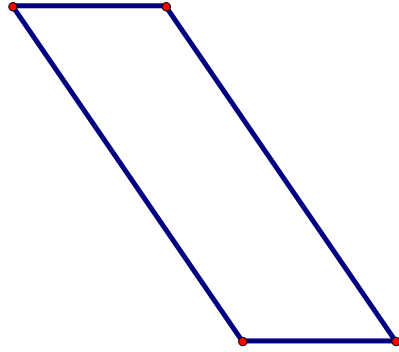
7-2 Area

1. For each triangle, draw the related parallelogram, which would have twice the area. For each parallelogram, draw the related rectangle, which would have the same area.

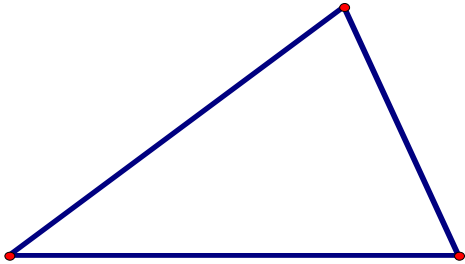
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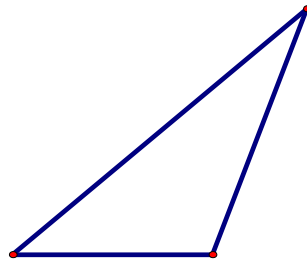
b)



c)

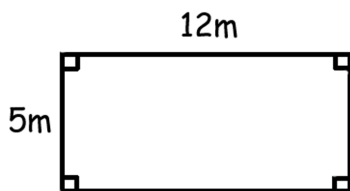


d)

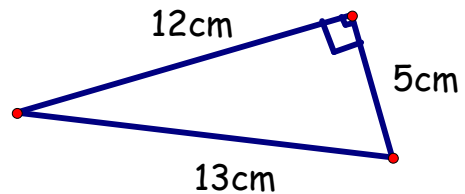


2. Calculate the area of each shape. Make sure to include units.

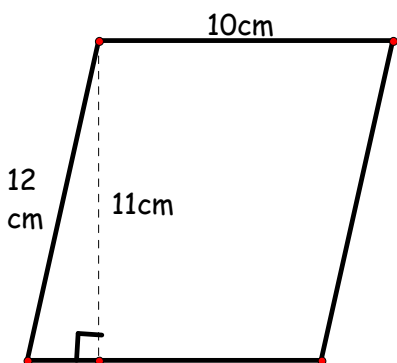
a)



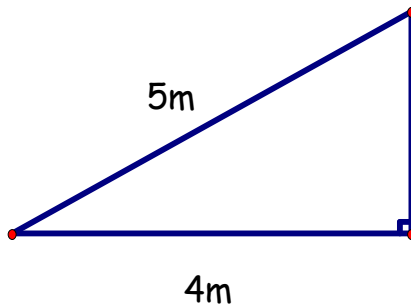
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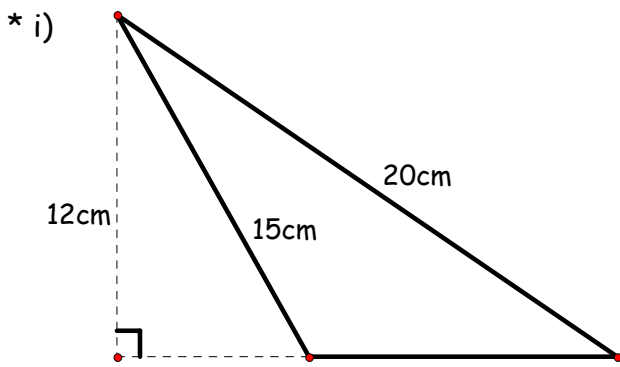
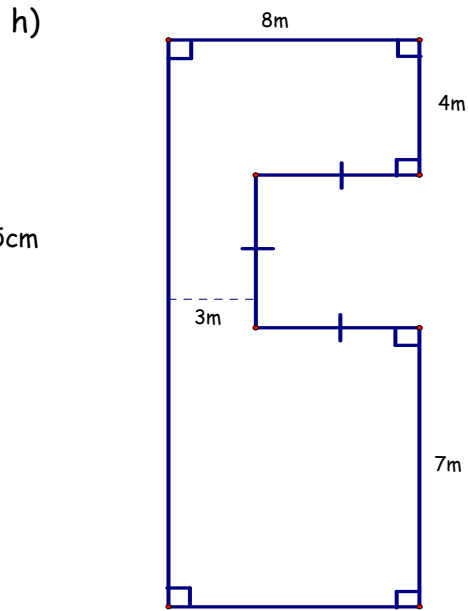
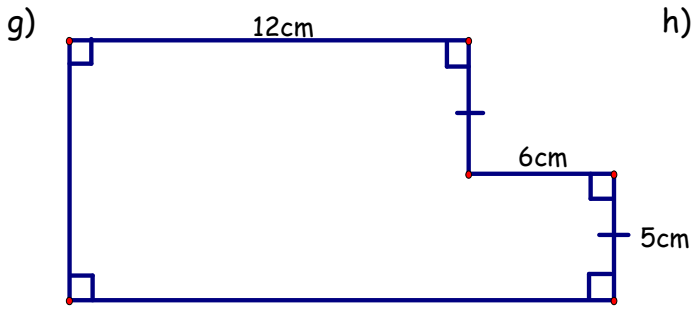
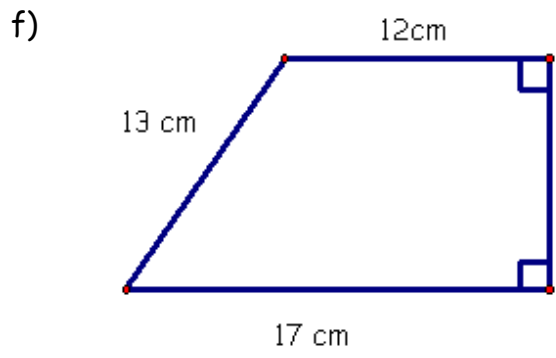
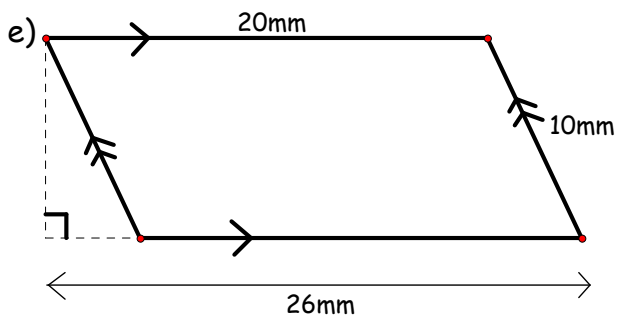


c)



d)





3. The area of a rectangle is 48 cm^2 , if the base is 8 cm, what is the height?

4. The area of a triangle is 36 cm^2 , if the height is 12 cm, how long is the base?

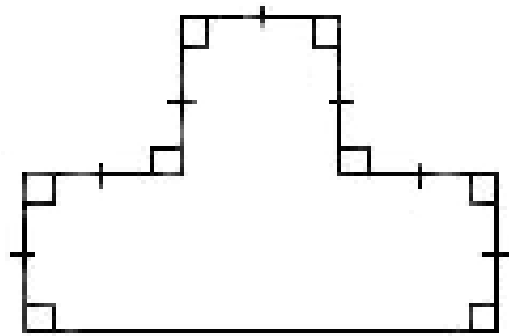
5. The area of a square is 64 cm^2 , what is the perimeter?

6. The perimeter of a square is 36 cm, what is the area?

7. The sides of a rectangle are whole numbers, if the area of the rectangle is 36 cm^2 :
- a) What is the maximum perimeter possible? b) What is the minimum perimeter?

8. The perimeter of a rectangle is 66 cm , while the base is 3 cm longer than the height. What is the area of the rectangle?

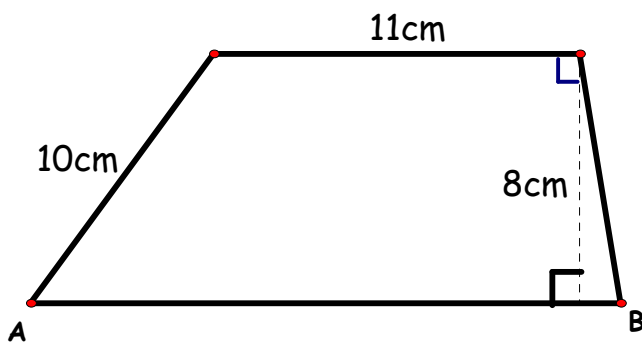
9. The area of the following figure is 196 mm^2 , what is the perimeter?



10. Find the area of trapezoid $MATH$, if $MA = 13 \text{ cm}$, $TH = MA$, $AT = 20 \text{ cm}$, and $MH = 30 \text{ cm}$. Note: this is called an isosceles trapezoid. Why do you think that is?



11. Find the area of the following trapezoid if $AB = 19 \text{ cm}$.



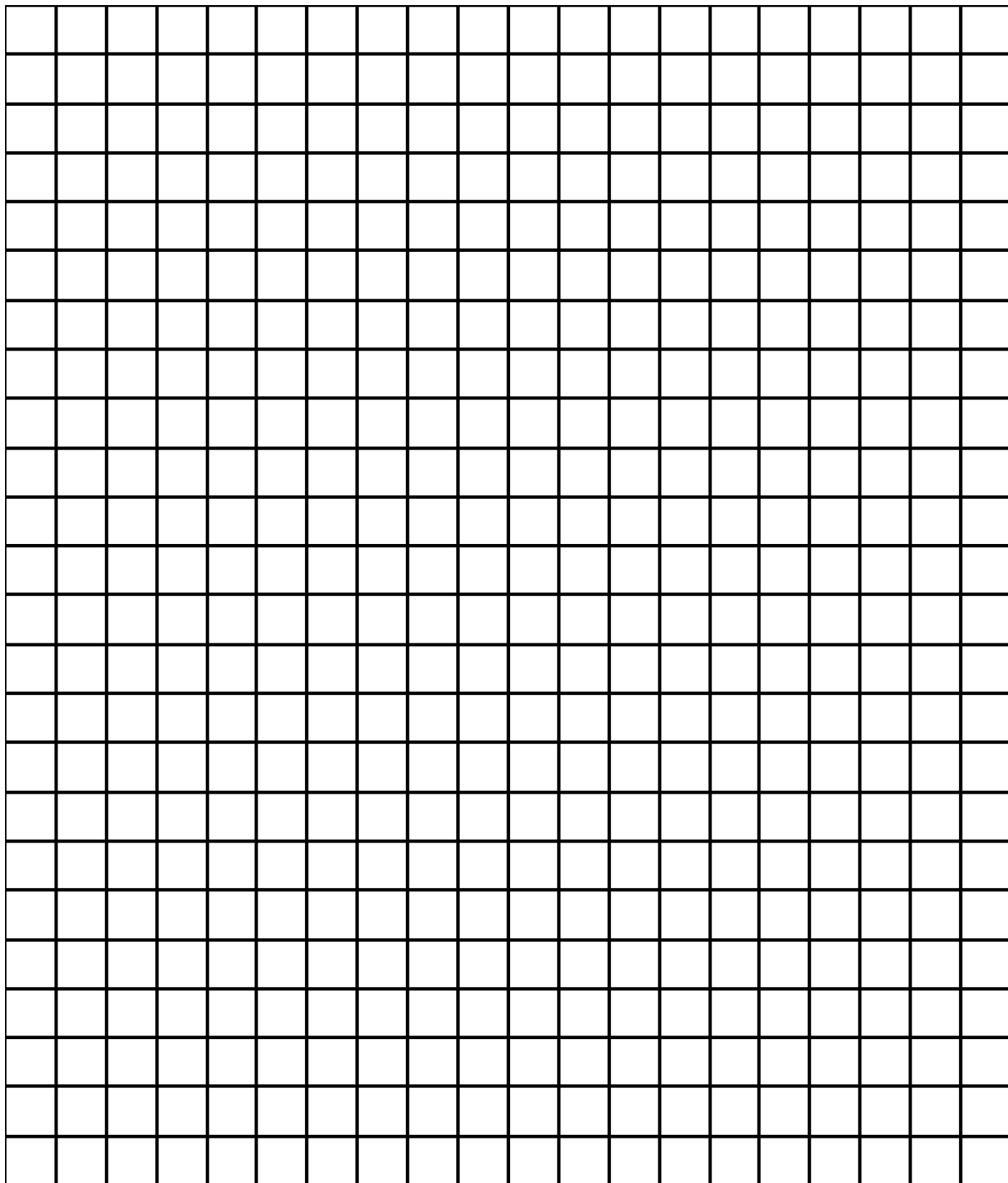
12. Petr has just graduated and got a job with College Pro Painters. His first job is to paint 2 rooms. The first room has two walls measuring 8 ft by 12 ft, and two walls measuring 8 ft by 9 ft. The second room has all four walls measuring 10 ft by 14 ft. One gallon of paint costs \$32 and covers 400 ft^2 . He needs to put two coats of paint on each wall. (Calculator can be used)

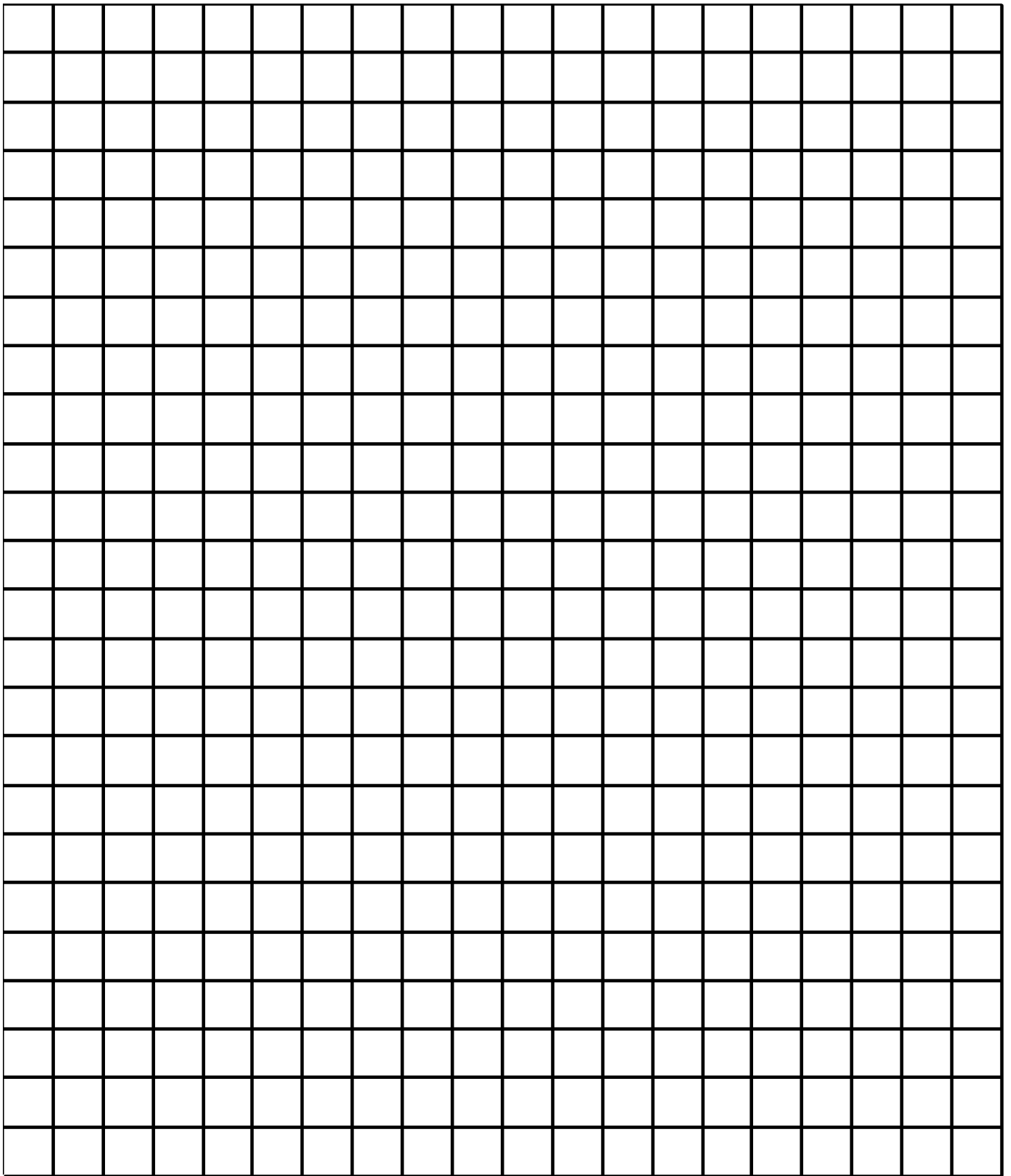
a) What is the total area that needs to be painted (include both coats)?

b) Realistically he can't buy fractions of a gallon of paint, so how much will he actually have to spend.

c) If he is given the option of buying gallons and/or quarts (one-quarter of a gallon, which cost \$12). What is the least amount he will have to spend? Is it worth doing this? Discuss.

7-3 Circles: Area and Circumference





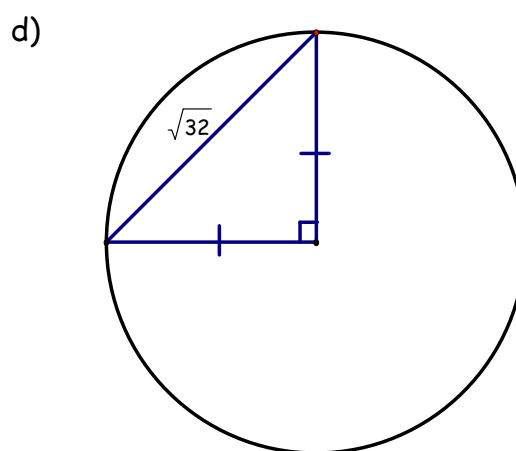
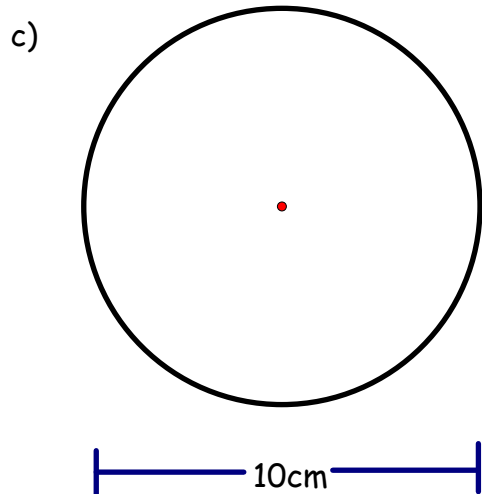
7-3 Circles: Area and Circumference

For all questions use the exact value of π , and then estimate the answer mentally using $\pi = 3$, or with the calculator using $\pi = 3.14$.

1. Determine the area and circumference for each of the following circles:

a) Radius = 10cm

b) Diameter = 6cm



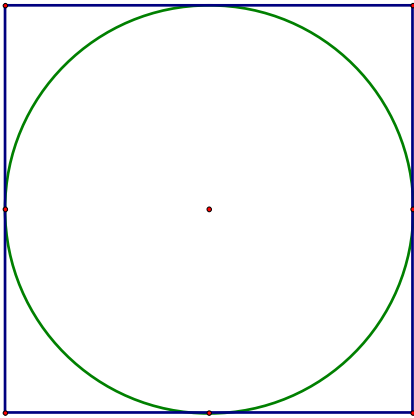
2. The circumference of a circle is 16π cm.

a) What is the radius?

b) What is the area?

3. The area of a circle is $16\pi \text{ cm}^2$. Find the circumference.

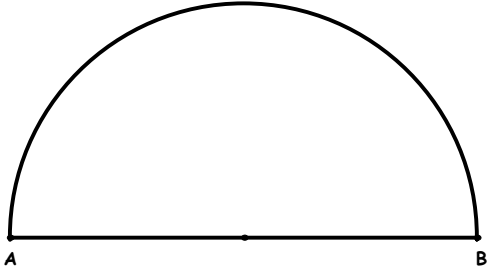
4. A circle is inscribed in a square as shown. If the area of the square is 100cm^2 , what is the area of the circle?



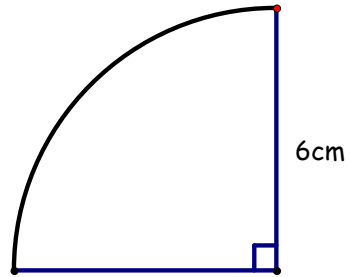
5. A circular pond has a radius of 30m. If there is estimated to be 1 alligator per 20m^2 , approximately how many alligators would you expect there to be in the pond? (Use your calculator and $\pi = 3.14$)

6. Give the area and perimeter of each shape. Remember to give answer exactly (using π), then estimate it. When there is a shaded area, give the area of the shaded part.

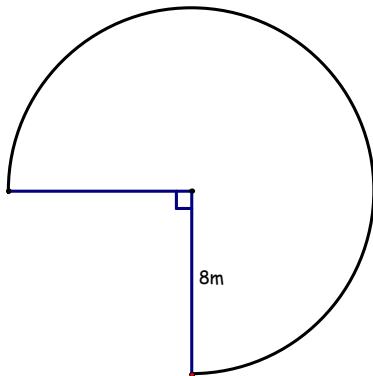
a) $AB = 20\text{cm}$



b)



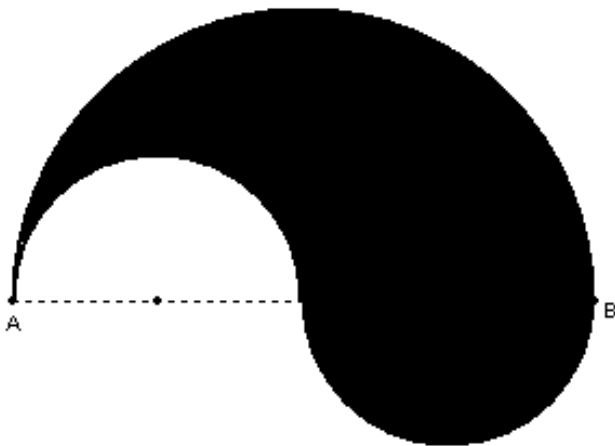
c)



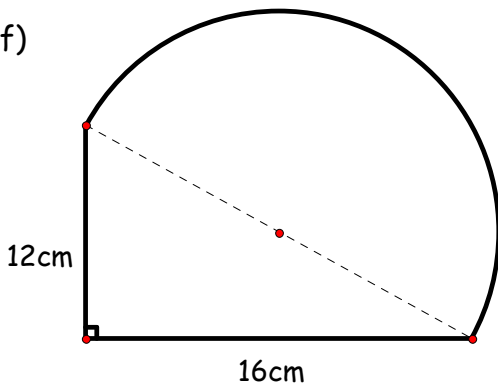
d) $AB = 16\text{cm}$



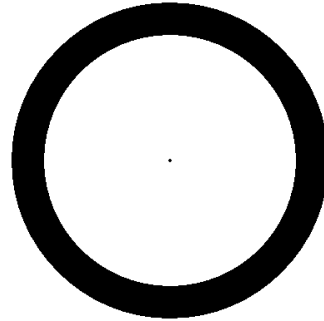
e) $AB = 8\text{m}$



f)



g) The diameter of the outer circle is 16cm and there is 2cm between the circles. Find area only.



*7. Billy the Goat is tied to the corner of a 5m by 12m barn. If his rope is 8m long, what is the total area of grass he can graze in? Give exact answer or approximate using $\pi = 3.14$

