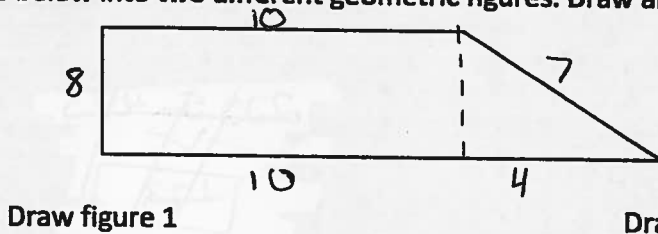


# Composite Figures

Name CLASS NOTES Date 2/10/14

1. Divide the shape below into two different geometric figures. Draw and name each figure.



Perimeter:

$$\begin{aligned}
 &8 + 10 + 4 + 7 + 10 \\
 &\quad \checkmark \\
 &18 + 4 + 7 + 10 \\
 &\quad \checkmark \\
 &22 + 7 + 10 \\
 &\quad \checkmark \\
 &29 + 10 \\
 &\quad \checkmark \\
 &\boxed{39}
 \end{aligned}$$

Name Rectangle

Name Triangle

2. How does separating an irregular, composite figure into various geometric figures help you calculate the perimeter and area of the irregular figure?

It creates shapes that you have area formulas to use.

3. Draw a new shape that is composed of three different geometric figures. Label each figure you use.



Stop Warmup Here

4. Calculate the perimeter and area of the geometric figures shown in the composite figure at right. Round to the nearest tenth. Show all work.

$$\begin{aligned}
 P &= 10 + 13.4 + 12.5 + 13.4 + 16 \\
 &= \boxed{65.3 \text{ m}}
 \end{aligned}$$

Area of triangle

$$A = \frac{1}{2} b \cdot h$$

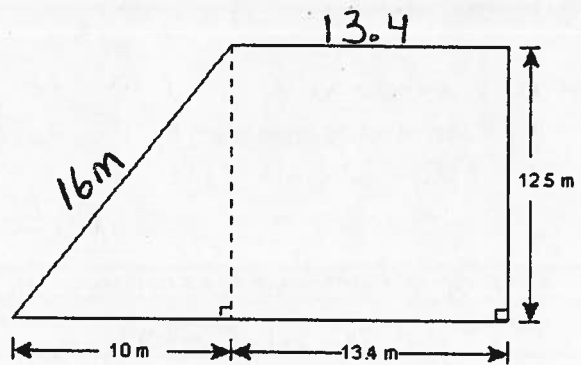
$$= \frac{1}{2} \cdot 10 \cdot 12.5$$

$$A = \boxed{62.5}$$

Area of Rectangle

$$A = 13.4 \cdot 12.5$$

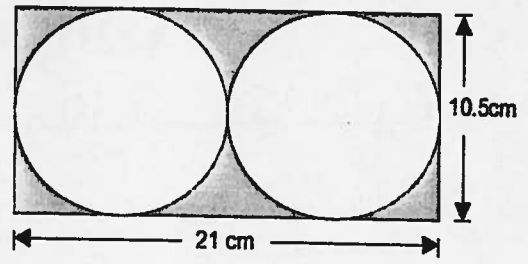
$$= \boxed{167.5}$$



$$\text{Total Area} = 62.5 + 167.5$$

$$= \boxed{230 \text{ m}^2}$$

5. Calculate the perimeter and area of the shaded region in the drawing of two circles at right. Round to the nearest tenth. Show all work.



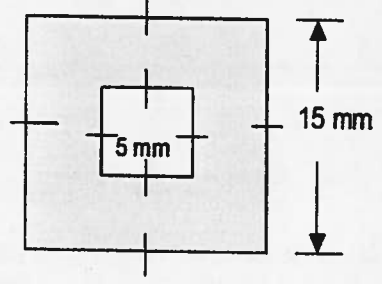
$$P = 21 + 10.5 + 21 + 10.5 = \boxed{63 \text{ cm}}$$

A =  
Rect  
 $A = l \cdot w$   
 $10.5 \cdot 21$   
 $\underline{220.5}$

circle  
 $A = \pi r^2$   
 $r = \frac{10.5}{2} = 5.25$   
 $3.14 \cdot 5.25^2$   
 $86.5 \times 2 = 173$

$$220.5 - 173 = \boxed{47.5 \text{ cm}^2}$$

6. Find the area of the shaded region in the drawing of squares at right. Round to the nearest tenth. Show all work.



Big Square  
 $A = s^2$   
 $15^2$   
 $\underline{225}$

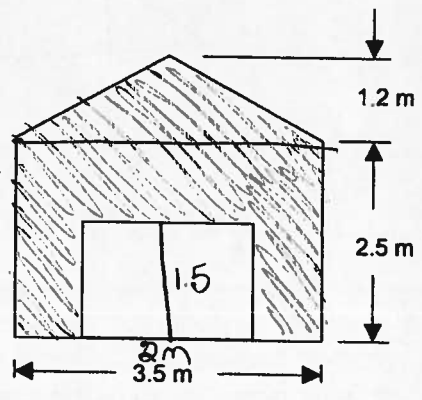
Small Square  
 $A = s^2$   
 $5^2$   
 $\underline{25}$

$$225 - 25 = \boxed{200 \text{ mm}^2}$$

**PROBLEM 1**

The front of a garage needs to be painted. The total area except for the door will be painted. The door is 1.5 m high and 2 m wide.

A. How many square meters of paint will be needed?



Triangle =  $A = \frac{1}{2} b \cdot h$   
 $\frac{1}{2} \cdot 3.5 \cdot 1.2 = 2.1$

Larger rectangle =  $A = l \cdot w$   
 $3.5 \cdot 2.5 = 8.75$

Smaller rectangle =  $A = l \cdot w$   
 $2 \cdot 1.5 = 3$

$$2.1 + 8.75 = 10.85$$

$$\underline{- 3.00}$$

$$\boxed{7.85}$$

B. A can of paint covers 2.5 m<sup>2</sup>. How many cans of paint will be needed?

$$7.85 \div 2.5 = 3.14$$

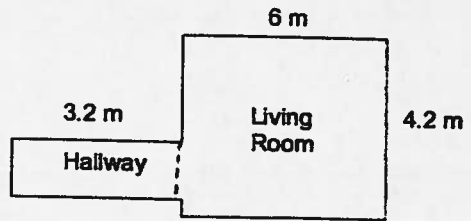
$\boxed{4 \text{ cans of paint}}$

C. A can of paint costs \$24.50. How much will it cost to paint the front of the garage?

$$4 \cdot 24.5 = \boxed{\$98.00}$$

**PROBLEM 2**

Joe needs to replace the carpet in his living room and hallway with laminate flooring. A floor plan is shown below.



- A. What is total area of floor that needs to be recovered?

Area of Living Room  $A = l \cdot w$   
 $4.2 \cdot 6 = 25.2$

Area of Hallway  $A = l \cdot w$   
 $3.2 \cdot 1.5 = 4.8$

$25.2 + 4.8 = 30 \text{ m}^2$

- B. Each box of laminate flooring contains  $2.15 \text{ m}^2$  of flooring material. How many boxes should Joe buy?

$30 \div 2.15 = 13.9$

**14 boxes**

- C. One box costs \$42.60. How much will the flooring cost?

$14 \cdot 42.60 = \$596.40$

- D. If Joe gets a coupon for 20% off, how much would the flooring cost?

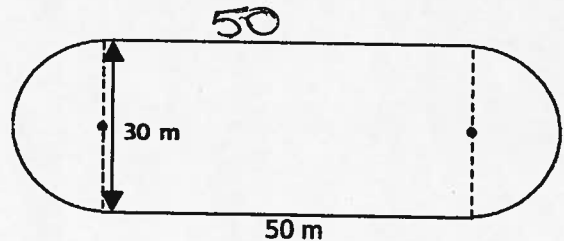
$596.40 - 0.20 = 119.28$

$596.40 - 119.28$

**\$477.12**

**PROBLEM 3**

The school's athletic director wants to seed the field and replace the fence. The field is shown at right.



- A. How many meters of fencing will he need to purchase?

$C = \pi \cdot d$   
 $3.14 \cdot 30 = 94.2$

$94.2 + 50 + 50 = 194.20 \text{ m}$

- B. How many square meters will need to be seeded with grass seed?

Area of Rectangle:  $A = l \cdot w$   
 $50 \cdot 30 = 1500$

Area of Circles:  $A = \pi r^2$   
 $3.14 \cdot 15^2 = 706.5$

$1500 + 706.5 =$

- C. If seeding costs \$1.45 per square meter and fencing costs \$23.50 per meter, how much will it cost to seed and replace the fence for the field?

$2206.5 \cdot 1.45 = 3199.43$

$194.20 \cdot 23.50 = 4563.70$

**2206.5 m<sup>2</sup>**

**\$7,763.13**

