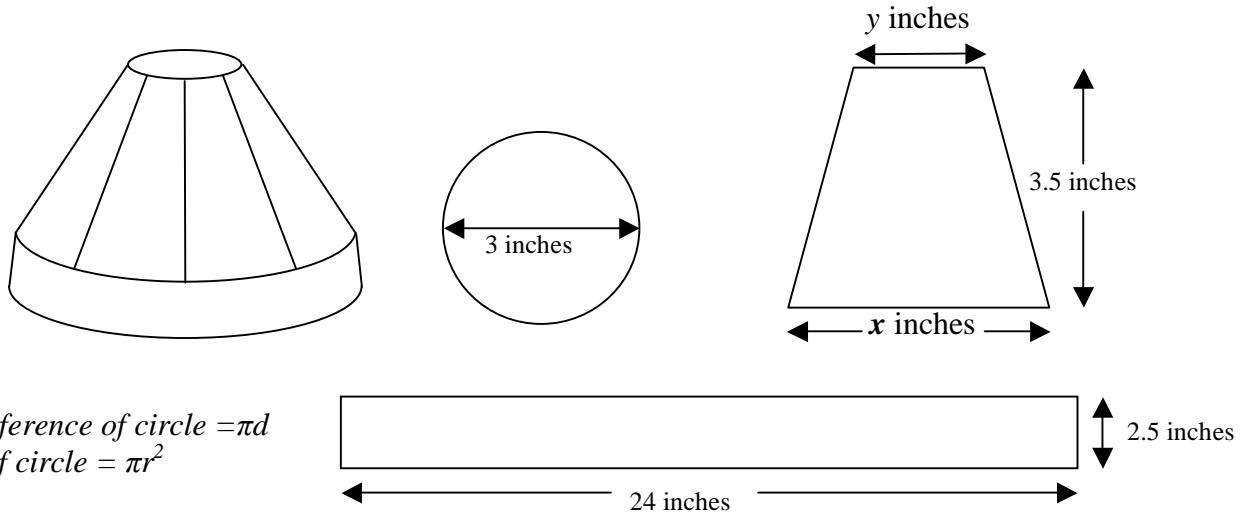


Winter Hat

This problem gives you the chance to:

- calculate the dimensions of material needed for a hat
- use circle, circumference and area, trapezoid and rectangle

Marie has a winter hat made from a circle, a rectangular strip and eight trapezoid shaped pieces.



1. The rectangular strip is 24 inches long. Eight trapezoids fit together around the rectangular strip.
Find the width (x) of the base of each trapezoid

_____ inches

2. The circle at the top of the hat has a diameter of 3 inches.

- a. Find the circumference of the circle. Show your calculation.

_____ inches

- b. Eight trapezoids fit around the circle. Find the width (y) of the top of each trapezoid?

_____ inches

3. Find the surface area of the outside of the hat. Show all your calculations.

_____ square inches

| Winter Hat | Rubric | |
|---|---------------------------|----------------|
| <ul style="list-style-type: none"> • • The core elements of performance required by this task are: • • calculate the dimensions of material needed for a hat • • use circle, circumference and area, trapezoid and rectangle • <p>Based on these, credit for specific aspects of performance should be assigned as follows</p> | points | section points |
| 1. Gives correct answer: 3 inches | 1 | 1 |
| 2.a. Gives correct answer: 9.4 or 3π inches Shows correct work such as: $\pi \times 3$ b. Gives correct answer: 1.2 or $\frac{3}{8}\pi$ inches | 1 1 1ft | 3 |
| 3. Gives correct answer: 126 square inches Allow 125 to 129 Shows correct work such as: $24 \times 2.5 = 60$ (rectangle) $\pi \times 1.5^2 = 2.25 \pi = 7.1$ (circle) $(3 + 1.2) / 2 \times 3.5 = 7.35$ (trapezoid) $7.35 \times 8 = 58.8$ (8 trapezoids) | 1 1 1 1ft 1ft | 5 |
| Total Points | | 9 |