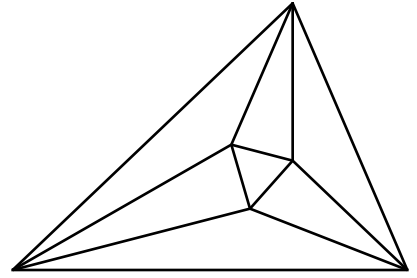


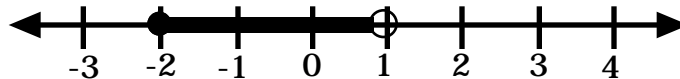
# Meet 4 - Event A 2003-2004

Questions are worth 2-2-2-4-4 points respectively.  
Remember your units.

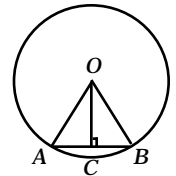


\_\_\_\_\_ 1. Simplify:  $\sqrt{32}$ .

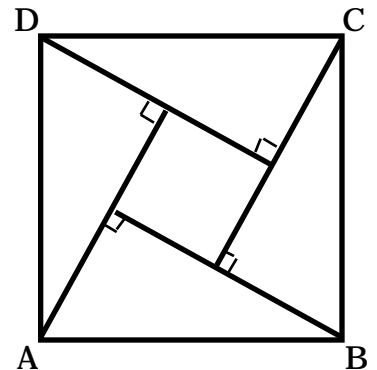
\_\_\_\_\_ 2. Write the inequality represented by this graph:



\_\_\_\_\_ 3. In circle O, the radius is 13 cm and the distance OC is 12 cm. Find the length of chord AB.



\_\_\_\_\_ 4. Square ABCD is divided into a smaller square and 4 right triangles. Each right triangle has legs of 1 cm and 3 cm. What is the area of ABCD?

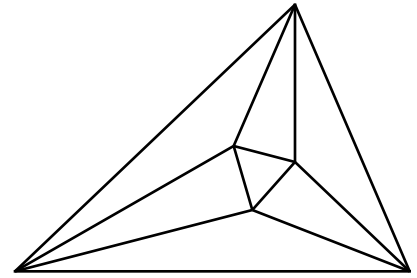


\_\_\_\_\_ 5. What is the perimeter of ABCD in problem 4?

# Meet 4 - Event A 2003-2004

## Answers

Questions are worth 2-2-2-4-4 points respectively.  
Remember your units.



$4\sqrt{2}$  1.  $\sqrt{16 \cdot 2} = 4\sqrt{2}$

$-2 \leq x < 1$  2.  
or  $x \geq -2$  and  $x < 1$

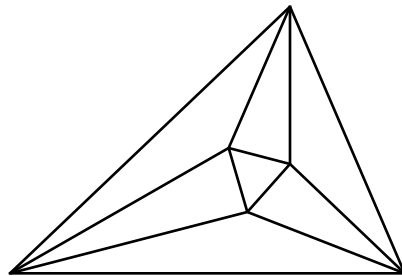
10cm 3.  $AC = BC = \sqrt{13^2 - 12^2} = \sqrt{25} = 5$ ,  $AB = 2(5) = 10\text{cm}$

$10\text{cm}^2$  4.  $(AB)^2 = 1^2 + 3^2 = 10$  or  $4\left[\frac{1}{2}(1)(3)\right] + (2)(2) = 10\text{cm}^2$

$4\sqrt{10}$  cm 5.  $AB = \sqrt{1^2 + 3^2} = \sqrt{10}$ ,  $P = 4\sqrt{10}$  cm

# Meet 4 - Event B 2003-2004

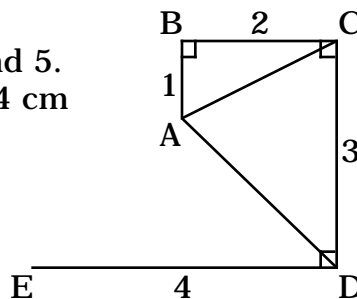
Questions are worth 2-2-2-4-4 points respectively.  
Remember your units.



\_\_\_\_\_ 1. Solve for  $x$ :  $3(x - 3) > 18$

\_\_\_\_\_ 2. Donna wanted to buy a bookcase marked at \$59.95, so she waited until the 20% discount sale. After the clerk had added on the sales tax of 6.5%, how much did Donna pay for the bookcase?

Use this figure for problems 3, 4, and 5.  
 $AB=1$  cm,  $BC=2$  cm,  $CD=3$  cm,  $DE=4$  cm



\_\_\_\_\_ 3. Find the length of  $AC$  as a radical.

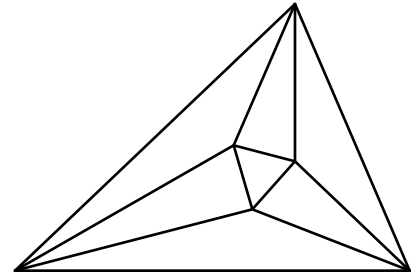
\_\_\_\_\_ 4. Find the length of  $AD$  in simplified radical form.

\_\_\_\_\_ 5. Find the area of  $\triangle ACD$ .

# Meet 4 - Event B 2003-2004

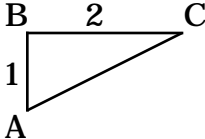
## Answers

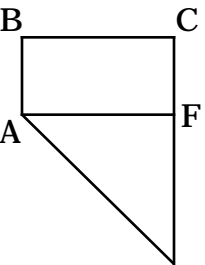
Questions are worth 2-2-2-4-4 points respectively.  
Remember your units.

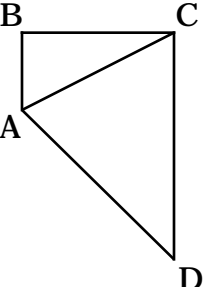


     $x > 9$      1.  $3x - 9 > 18, 3x > 27, x > 9$

    \$51.08     2.  $\$59.95(0.8)(1.065) = \$51.08$

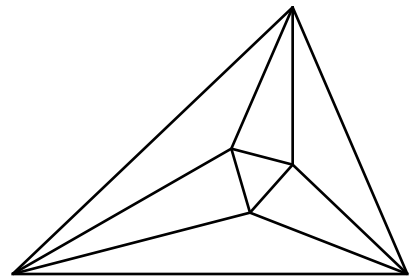
     $\sqrt{5}$  cm     3.   $AC = \sqrt{1^2 + 2^2} = \sqrt{5}$  cm

     $2\sqrt{2}$  cm     4.   $AF = BC = 2$  cm,  $DF = 3 - 1 = 2$  cm  
 $AD = \sqrt{2^2 + 2^2} = \sqrt{8} = 2\sqrt{2}$  cm

     $3$  cm<sup>2</sup>     5.   $\text{Base} = CD = 3, \text{Height} = BC = 2, A = 0.5(3)(2) = 3$  cm<sup>2</sup>

# Meet 4 - Event C 2003-2004

Questions are worth 2-2-2-4-4 points respectively.  
Remember your units.

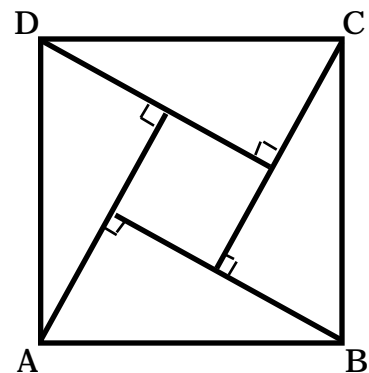


\_\_\_\_\_ 1. Simplify:  $\sqrt{32a^2b^3}$ ,  $a > 0$ .

\_\_\_\_\_ 2. Simplify:  $\sqrt{a^2}$ ,  $a < 0$

\_\_\_\_\_ 3. Solve for all values of  $x$ :  $-\sqrt{(x-3)^2} = -5$

\_\_\_\_\_ 4. Square ABCD is divided into a smaller square and 4 right triangles. Each right triangle has legs of 1 cm and 3 cm. What is the area of ABCD?



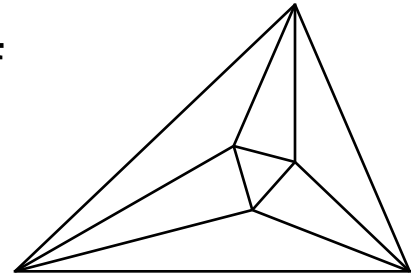
\_\_\_\_\_ 5. What is the perimeter of ABCD in problem 4?

Name \_\_\_\_\_ School \_\_\_\_\_

# Meet 4 - Event C 2003-2004

## Answers

Questions are worth 2-2-2-4-4 points respectively.  
Remember your units.



$4ab\sqrt{2b}$  1.  $\sqrt{16 \cdot 2 \cdot a^2 \cdot b^2 \cdot b} = 4ab\sqrt{2b}$

$-a$  2.  $\sqrt{a^2} = -a$  or  $|a|$   
or  $|a|$

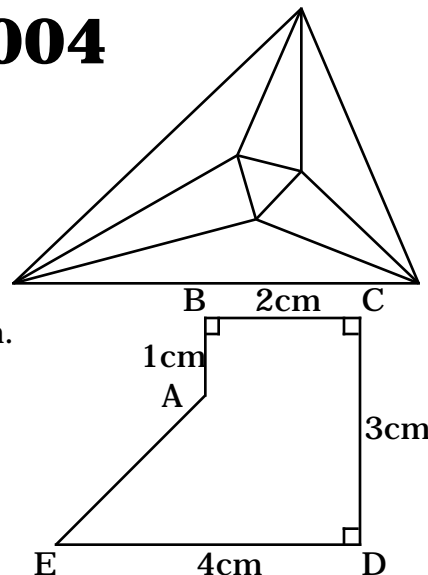
$-2, 8$  3.  $(x-3)^2 = 25$ ,  $x-3 = 5$ ,  $x = 8$ , or  $x-3 = -5$ ,  $x = -2$

$10\text{cm}^2$  4.  $(AB)^2 = 1^2 + 3^2 = 10$  or  $4\left[\frac{1}{2}(1)(3)\right] + (2)(2) = 10\text{cm}^2$

$4\sqrt{10}$  cm 5.  $AB = \sqrt{1^2 + 3^2} = \sqrt{10}$ ,  $P = 4\sqrt{10}$  cm

# Meet 4 - Team Event 2003-2004

Questions are worth 4 points each.  
Remember your units.



\_\_\_\_\_ 1. Find the length of  $AE$  in simplified radical form.

\_\_\_\_\_ 2. Find the area of pentagon  $ABCDE$ .

\_\_\_\_\_ 3. A grandfather clock came in a wooden box that was 18 inches by 24 inches by 6 feet. What is the total surface area of the box?

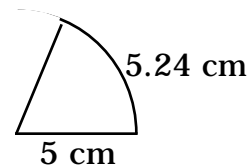
\_\_\_\_\_ 4. A square pyramid has base edges of 6 cm and side edges of 5 cm. What is the total surface area?

\_\_\_\_\_ 5. A tuna can is 8.5 cm in diameter and 3.5 cm high, but the label is exactly 3 cm high. There is a 1 cm overlap where the label is glued. How much paper is used to make the label, to the nearest tenth?

\_\_\_\_\_ 6. Simplify:  $\sqrt{3675}$ .

\_\_\_\_\_ 7. Terry wrote a check for \$41.84 for dinner for two in the city. He had added \$5 to the bill for the tip. The tax was 7%. What percent of the cost of the dinners (excluding tax and tip) was the tip, to the nearest percent?

\_\_\_\_\_ 8. A circle sector has a radius of 5 cm and an arc length of 5.24 cm. What is the area of the sector, to the nearest hundredth?



\_\_\_\_\_ 9. What is the distance from  $(1, -2)$  to  $(7, 12)$  as a simplified radical?

\_\_\_\_\_ 10. Alice is 5'3" tall and is standing next to a tree. Her shadow is 3' long and the tree shadow is 12' long. How tall is the tree?

School \_\_\_\_\_

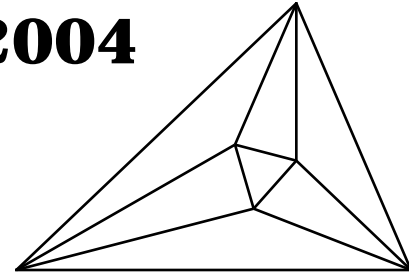
# Meet 4 - Team Event

# 2003-2004

## Answers

Questions are worth 4 points each.

Remember your units.



$2\sqrt{2}$  cm 1. Hypotenuse of triangle =  $\sqrt{2^2 + 2^2} = 2\sqrt{2}$  cm

$8 \text{ cm}^2$  2. Rectangle area =  $2 \times 3 = 6$ , Triangle area =  $0.5(2)(2) = 2$ ,  $6 + 2 = 8 \text{ cm}^2$

48 sq. ft. 3.  $2(1.5)(2) + 2(1.5)(6) + 2(2)(6) = 48 \text{ sq. ft.} \times 144 = 6912 \text{ sq. in.}$   
or 6912 sq. in.

$84 \text{ cm}^2$  4. Base =  $6 \times 6 = 36$ , Slant Height =  $\sqrt{5^2 - 3^2} = 4$ ,  $4\left(\frac{1}{2}\right)(6)(4) = 48$ ,  
Area =  $36 + 48 = 84 \text{ cm}^2$

$83.1 \text{ cm}^2$  5.  $C = \pi(8.5) = 26.7$ , Length of label =  $26.7 + 1 = 27.7$ ,  
Area =  $3 \times 27.7 = 83.1 \text{ cm}^2$

$35\sqrt{3}$  6.  $\sqrt{25 \cdot 49 \cdot 3} = 5 \cdot 7\sqrt{3} = 35\sqrt{3}$

15% 7.  $41.54 - 5 = 36.54$ ,  $36.54 / 1.07 = 34.15$ ,  $(5 / 35.15) \times 100 = 14.64$

$13.10 \text{ cm}^2$  8.  $\frac{5.24}{10\pi} = \frac{a}{25\pi}$ ,  $a = 13.10 \text{ cm}^2$

$2\sqrt{58}$  9.  $\sqrt{(7-1)^2 + (12-2)^2} = \sqrt{36 + 196} = \sqrt{232} = \sqrt{4 \cdot 58} = 2\sqrt{58}$

21 feet 10.  $5'3'' = 5\frac{3}{12} = 5.25 \text{ feet}$ ,  $\frac{5.25}{3} = \frac{x}{12}$ ,  $x = 21 \text{ feet}$