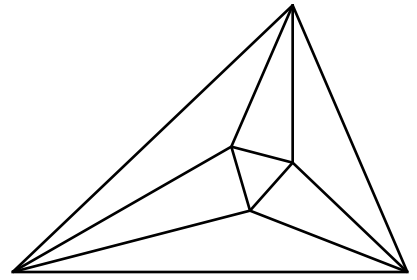


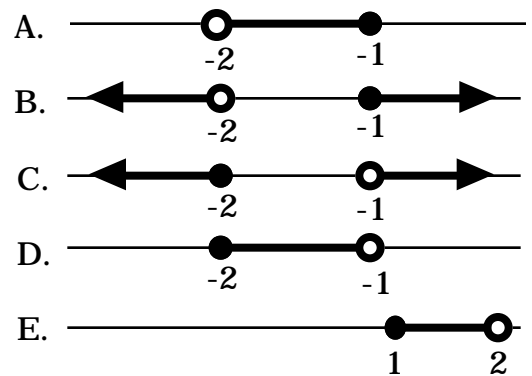
# Meet 4 - Event A 2004-2005

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

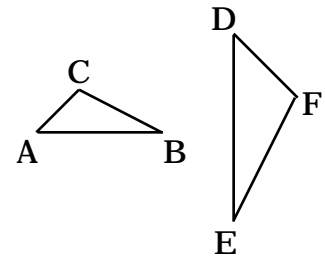


\_\_\_\_\_ 1. Simplify:  $\sqrt{80}$

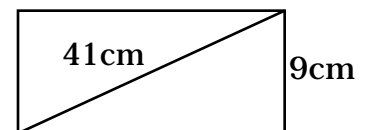
\_\_\_\_\_ 2. Which is the graph of the condition:  
 $x < -2$  or  $x \geq -1$



\_\_\_\_\_ 3.  $\triangle ABC \approx \triangle DEF$ . If  $AB=14"$ ,  $BC=13"$ ,  $AC=4"$ , and  $DF=6"$ , find  $DE$ .



\_\_\_\_\_ 4. Find the perimeter of a rectangle with one side of 9 cm and a diagonal of 41 cm.



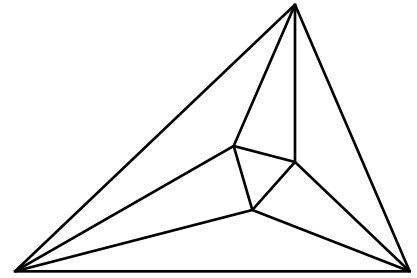
\_\_\_\_\_ 5. Latitia earns 3% interest on the amount in her account each year. The bank deposits the interest in her account at the end of each year. If she deposits \$525 and doesn't take any money out, how much will be in her account after three years? This is compound interest.

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

# Meet 4 - Event A 2004-2005

## Answers

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



4√5 1.  $\sqrt{80} = \sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 5} = 2 \cdot 2\sqrt{5} = 4\sqrt{5}$

B 2. "or" is the correct word to use in this problem. The value of x cannot be  $< 2$  and  $\geq 1$  because these values are mutually exclusive.

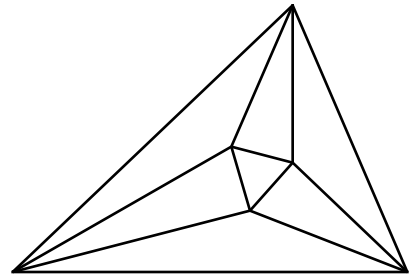
21" 3.  $\frac{AC}{DF} = \frac{AB}{DE}$ , so  $\frac{4}{6} = \frac{14}{x}$ ,  $x = 21$

98cm 4.  $\sqrt{41^2 - 9^2} = 40$ ,  $P = 2(40 + 9) = 98$

\$573.68 5.  $\$525(1.03) = \$540.75$  after 1 year.  
 $\$540.75(1.03) = \$556.97$  after 2 years.  
 $\$556.97(1.03) = \$573.68$  after 3 years.

# Meet 4 - Event B 2004-2005

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

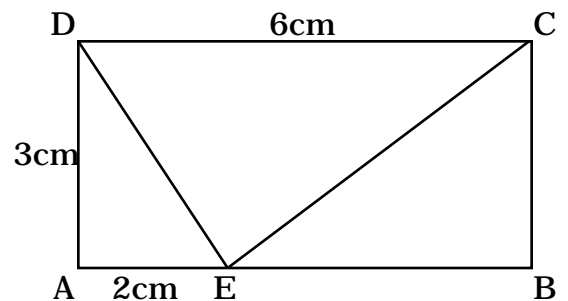


\_\_\_\_\_ 1. Joan wants to receive \$2.00 for each card of hers sold in Sarah's Shop. If Sarah keeps 40% of the price of each card, what price should be marked on each card?

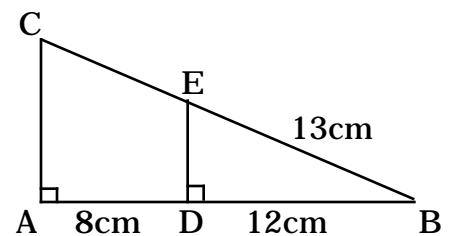
\_\_\_\_\_ 2. Find the surface area of a cube that has sides of 5 inches.

\_\_\_\_\_ 3. Solve for  $x$ :  $4(7 - x) < 36$ .

\_\_\_\_\_ 4. In rectangle  $ABCD$ , if  $AD=3\text{cm}$ ,  $AE=2\text{cm}$ , and  $DC=6\text{cm}$ , find the perimeter of triangle  $CDE$  to the nearest hundredth.



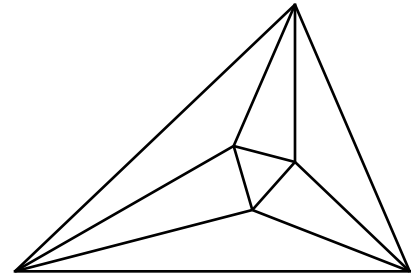
\_\_\_\_\_ 5. In the figure,  $AD=8\text{cm}$ ,  $DB=12\text{cm}$ , and  $BE=13\text{cm}$ . Find the length of  $AC$ .



# Meet 4 - Event B 2004-2005

## Answers

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



\$3.33 1. \$2.00 is the 60% of the price that Joan receives, so  $0.60p = 2.00$ ,  $p = 3.33$

150in<sup>2</sup> 2. Surface area =  $6 \times 5 \times 5 = 150 \text{ in}^2$   
or 150 sq.in.

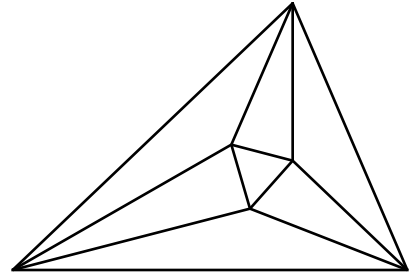
$x > -2$  3.  $28 - 4x < 36$ ,  $-4x < 8$ ,  $x > -2$

14.61cm 4.  $BE = 6 - 2 = 4$ ,  $BC = 3$  so  
 $DE = \sqrt{(3^2 + 2^2)} = 3.61$ ,  $CE = \sqrt{(3^2 + 4^2)} = 5$   
 $P = 6 + 5 + 3.61$

$8\frac{1}{3}$  cm 5.  $DE = \sqrt{13^2 - 12^2} = 5 \text{ cm}$   
 $AB = 8 + 12 = 20 \text{ cm}$   
or  $8\bar{3}$  cm  $\frac{5}{x} = \frac{12}{20}$   $x = \frac{100}{12}$

# Meet 4 - Event C 2004-2005

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

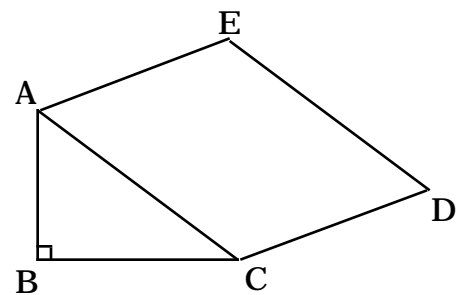


\_\_\_\_\_ 1. Simplify:  $\sqrt{1800}$  .

\_\_\_\_\_ 2. Simplify:  $-\sqrt{80a^2b}$

\_\_\_\_\_ 3. A sweater is discounted 30%. After 6.5% sales tax is added on, the sweater costs \$34.95. What was the original (not discounted) price of the sweater?

\_\_\_\_\_ 4. Find the surface area of a right triangular prism if  $AB=6\text{in}$ ,  $BC=8\text{in}$ , and  $CD=9\text{in}$ .



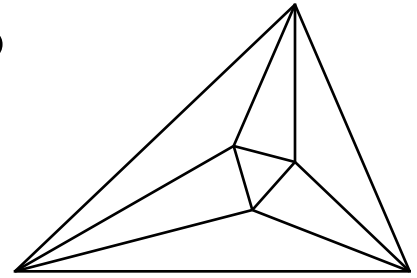
\_\_\_\_\_ 5. A map has a scale of 1 cm=1.5 miles. If the map is shrunk to 80% of its original size, how many centimeters represent 3 miles?

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

# Meet 4 - Event C 2004-2005

## Answers

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



$30\sqrt{2}$  1.  $\sqrt{1800} = \sqrt{100 \cdot 9 \cdot 2} = 10 \cdot 3\sqrt{2} = 30\sqrt{2}$

$-4|a|\sqrt{5b}$  2.  $-\sqrt{80a^2b} = -\sqrt{16 \cdot 5 \cdot a^2 \cdot b} = -4|a|\sqrt{5b}$   
 $|a|$  is needed because you do not know if  $a$  is positive or negative.

\$46.88 3.  $1.065(0.7p) = \$34.95$ ,  $0.7455p = 34.95$ ,  $p = 46.8812$

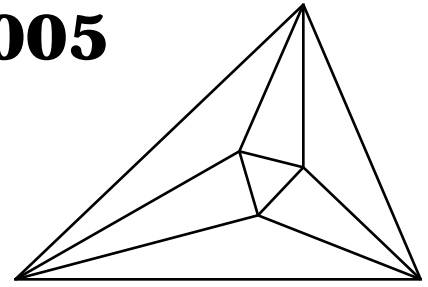
$264 \text{ in}^2$  4.  $AC = \sqrt{6^2 + 8^2} = 10$ , Area of  $\triangle ABC = \frac{1}{2} \cdot 6 \cdot 8 = 24$   
Surface Area =  $2(24) + 9(6 + 8 + 10) = 264 \text{ in}^2$

1.6 cm 5. The shrinking leaves  $0.8 \text{ cm} = 1.5 \text{ miles}$ .

$$\frac{0.8}{1.5} = \frac{x}{3}, \quad x = 1.6 \text{ cm}$$

# Meet 4 - Team Event 2004-2005

Questions are worth 4 points each.  
Remember your units.



\_\_\_\_\_ 1. Problems 1-3 use the figure to the right. Given:  $BC=8\text{cm}$ ,  $AB=30\text{cm}$ ,  $BF=12\text{cm}$ . Find the length of  $DF$ .

\_\_\_\_\_ 2. Given:  $AF=25\text{cm}$ ,  $FB=15\text{cm}$ ,  $DF=6\text{cm}$ . Find  $AE$ .

\_\_\_\_\_ 3. Given:  $AF=25\text{cm}$ ,  $FB=15\text{cm}$ ,  $DF=6\text{cm}$ . Find  $DC$  to the nearest tenth.

\_\_\_\_\_ 4. Dorcas earns 3% annual interest, compounded monthly. How much will she have in her account at the end of 10 months if she starts with \$98.50?

\_\_\_\_\_ 5.  $\triangle ABC$  is similar to each small triangle and  $D$  is the midpoint of  $AC$ . If the perimeter of  $\triangle ABC$  is 20 inches, what is the perimeter of  $\triangle DEF$ ?

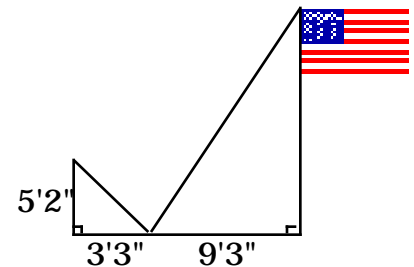
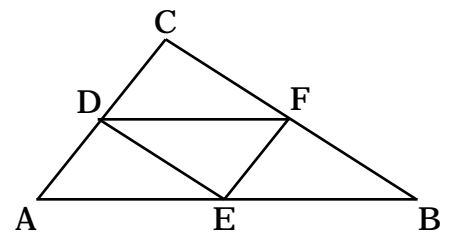
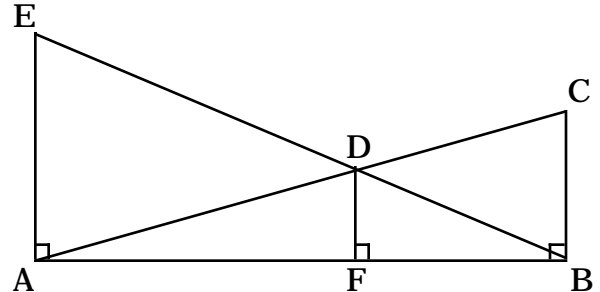
\_\_\_\_\_ 6. A map has a scale of 1 cm = 1 mile. If the map is enlarged 120%, then 3 cm represents how many miles.

\_\_\_\_\_ 7. What is the area of an equilateral triangle with a perimeter of 60 cm? Answer in simplified radical form.

\_\_\_\_\_ 8. Simplify:  $\sqrt{6300}$ .

\_\_\_\_\_ 9. Simplify:  $3\sqrt{5} + 2\sqrt{125} + 2\sqrt{5} + 4\sqrt{10}$

\_\_\_\_\_ 10. Carlos used a mirror to find the height of a flagpole. The distance from his eye to the ground was 5' 2". The distance from his feet to the mirror was 3' 3" and the distance from the flag pole to the mirror was 9' 3". How tall was the flag pole in feet and inches, to the nearest inch?



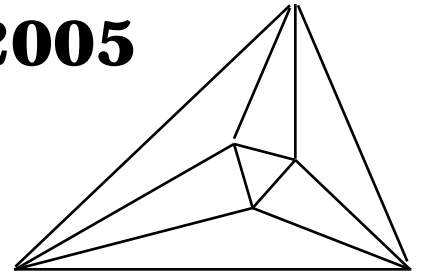
# Meet 4 - Team Event

# 2004-2005

## Answers

Questions are worth 4 points each.

Remember your units.



4.8 cm 1.  $AF = 30 - 12 = 18\text{cm}$ ,  $\frac{8}{x} = \frac{30}{18}$ ,  $x = 4.8 \text{ cm}$

16 cm 2.  $AB = 25 + 15 = 40\text{cm}$ ,  $\frac{6}{15} = \frac{x}{40}$ ,  $x = 16 \text{ cm}$

15.4cm 3.  $AD = \sqrt{6^2 + 25^2}$ ,  $\frac{25}{25.71} = \frac{40}{AC}$ ,  $AC = 41.136$ ,  $DC = 41.136 - 25.71 = 15.4\text{cm}$

\$100.99 4.  $\frac{0.03}{12} = 0.0025$  monthly rate,  $\$98.50(1.0025)^{10} = \$100.99$

10 inches 5. If  $D$  is the midpoint of  $AC$ , then  $AD=DC=EF=\frac{1}{2}AC$ . If the triangles are all similar, then each shorter length must be  $\frac{1}{2}$  of the corresponding longer length, so  $P = \frac{1}{2}(20) = 10$  inches

2.5 miles 6. The enlargement has  $1.2 \text{ cm} = 1 \text{ mile}$ .  $\frac{1.2}{3} = \frac{1}{x}$ ,  $x = 2.5$

$100\sqrt{3} \text{ in}^2$  7.  $\frac{60}{3} = 20$  in. on each side.  $A = \frac{20^2\sqrt{3}}{4} = 100\sqrt{3}$

$30\sqrt{7}$  8.  $\sqrt{6300} = \sqrt{100 \cdot 9 \cdot 7} = 10 \cdot 3\sqrt{7} = 30\sqrt{7}$

$15\sqrt{5} + 4\sqrt{10}$  9.  $2\sqrt{125} = 2\sqrt{25 \cdot 5} = 10\sqrt{5}$ ,  $3\sqrt{5} + 10\sqrt{5} + 2\sqrt{5} + 4\sqrt{10} = 15\sqrt{5} + 4\sqrt{10}$

14'4" 10.  $5'2"=62"$ ,  $3'4"=40"$ ,  $9'3"=111"$ ,  $\frac{62}{40} = \frac{x}{111}$ ,  $x = 172.05 = 14'4"$