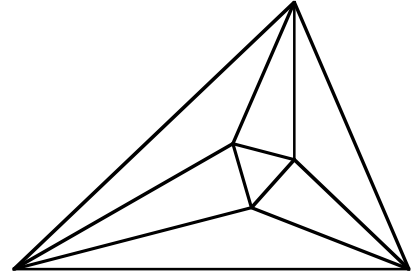


Meet 4 - Event A 2007-2008

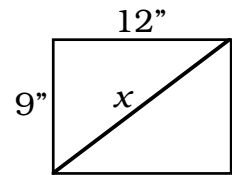
Questions are worth 2-2-2-4-4 points respectively.
Remember your units.



_____ 1. Solve for x : $0.7x > -28$

_____ 2. Solve for y : $|y| \leq 3$

_____ 3. How long is the diagonal in a 9" by 12" rectangle?



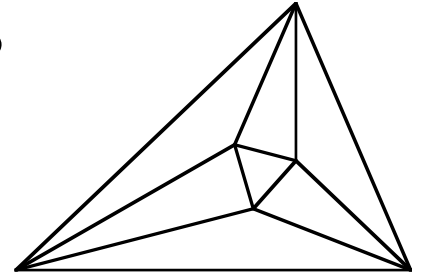
_____ 4. If the rectangle in problem 3 is magnified to four times its present area, how long is the new diagonal?

_____ 5. Simplify: $\sqrt{x^3}$

Meet 4 - Event A 2007-2008

Answers

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



$$\underline{x > -40} \quad 1. \quad \frac{0.7x}{0.7} > \frac{-28}{0.7} \quad x > -40$$

$$\underline{-3 \leq y \leq 3} \quad 2. \quad -3 \leq y \leq 3 \quad \text{or} \quad y \geq -3 \text{ and } y \leq 3$$

$$\underline{15''} \quad 3. \quad x^2 = 9^2 + 12^2 = 225, \quad x = \sqrt{225} = 15$$

$$\underline{30''} \quad 4. \quad A = 9'' \times 12'' = 108\text{in}^2, \quad 4(108) = 432\text{in}^2 = 18'' \times 24''$$

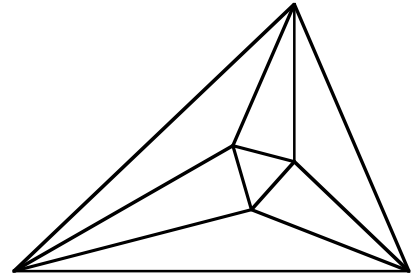
so the lengths are doubled, not multiplied times 4. So $2(15)=30''$

(If the answer in problem 3 is wrong,
give credit in 4 for double the answer in 3.)

$$\underline{x\sqrt{x}} \quad 5. \quad \sqrt{x^3} = \sqrt{x^2 \cdot x} = x\sqrt{x}$$

Meet 4 - Event B 2007-2008

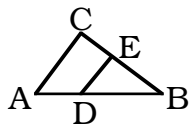
Questions are worth 2-2-2-4-4 points respectively.
Remember your units.



_____ 1. Simplify: $\sqrt{9 \cdot 17 \cdot 25}$

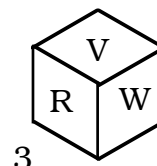
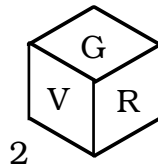
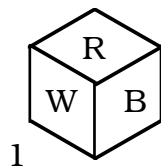
_____ 2. Solve for x : $3(x - 4) \geq 9$

_____ 3. If $\triangle ABC \sim \triangle DBE$ and $AC = 6"$, $AD = 3"$, $DB = 9"$, what is the length of DE ?



_____ 4. My house went up in value by 5% each year for 5 years. What was the percent increase for the 5 year period, to the nearest percent?

_____ 5. Below are three views of the same cube with faces of various colors showing. What color is the face opposite the red face in the first view?
R=Red, W=White, B=Blue, G=Green, V=Violet

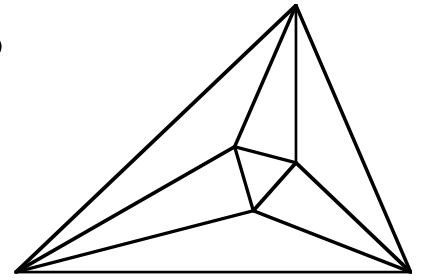


Name _____ School _____

Meet 4 - Event B 2007-2008

Answers

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



$15\sqrt{17}$ 1. 9 and 25 are perfect squares and 17 is prime so:
 $\sqrt{9} \cdot \sqrt{17} \sqrt{25} = 3 \cdot 5 \cdot \sqrt{17} = 15\sqrt{17}$

$x \geq 7$ 2. $3x - 12 \geq 9$, $3x \geq 21$, $x \geq 7$

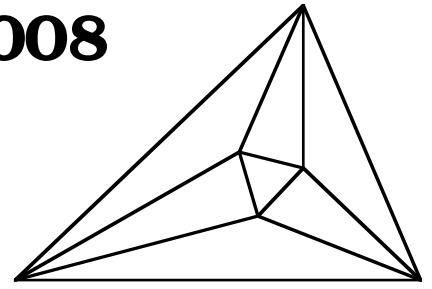
4.5" 3. $\frac{AC}{DE} = \frac{AB}{DB}$ so $\frac{6}{DE} = \frac{3+9}{9} = \frac{12}{9}$, $DE = 4.5"$

28% 4. $1.05(1.05(1.05(1.05(1.05x)))) = 1.28x$, $0.28 = 28\%$

Red 5. From view 2, if red is the same as the top in view 1, then violet is opposite blue, green is opposite white. In view 3, if red were on top, white would be opposite white so there must be two red faces. View 3 puts white and violet adjacent, so violet is opposite blue, red is opposite red. This is consistent with view 2.

Meet 4 - Team Event 2007-2008

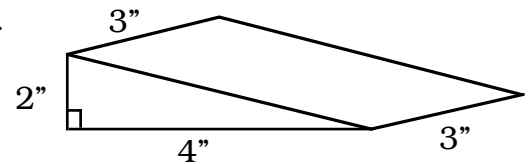
Questions are worth 4 points each.
Remember your units.



_____ 1. Solve for x : $|4 - x| < 7$

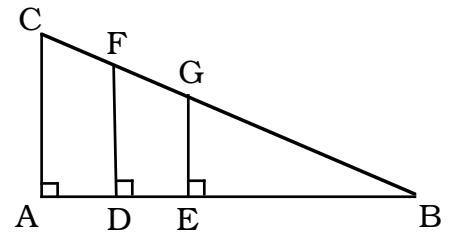
_____ 2. If you triple the length of the sides of a rectangle, what happens to the area?

_____ 3. A triangular wedge is cut from a block of wood 2" by 3" by 4". What is the surface area of the wedge, to the nearest hundredth?



_____ 4. If the legs of a right triangle are 4 cm and 6 cm, what is the length of the hypotenuse as a simplified radical?

_____ 5. If $AC=12m$, $EG=7m$, $EB=14m$, and $AD=DE$, find the length of DF .

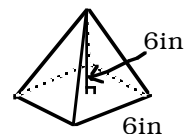


_____ 6. If a regular hexagon has a perimeter of 54 inches, what is its area exactly?

_____ 7. What is the total surface area of a cylinder with a diameter of 10 inches and a height of 15 inches, to three significant digits?

_____ 8. Simplify: $\sqrt{9450}$.

_____ 9. A square pyramid has a base edge of 6 inches and a height of 6 inches. What is the total surface area, exactly?



_____ 10. A jacket was marked down 25 % before Thanksgiving. After Thanksgiving sales were 25% off the marked price. Sales tax is 7.5 %. If Mia paid \$48.30, what was the original price of the jacket?

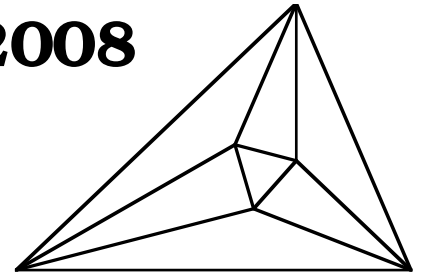
Meet 4 - Team Event

2007-2008

Answers

Questions are worth 4 points each.

Remember your units.



$-3 < x < 11$ 1. $-7 < 4 - x < 7$, $-11 < -x < 3$, $11 > x > -3$

9 times larger 2. $A = xy$ originally, $A = 3x \cdot 3y = 9xy$ afterward
or equivalent answer

39.42 in^2 3. The missing edge length is $\sqrt{2^2 + 4^2} = 4.472$.
 $2\left(\frac{1}{2} \cdot 4 \cdot 2\right) + 2 \cdot 3 + 3 \cdot 4 + 4.472 \cdot 3 = 39.416$

$2\sqrt{13} \text{ cm}$ 4. $\sqrt{4^2 + 6^2} = \sqrt{52} = \sqrt{4 \cdot 13} = 2\sqrt{13}$

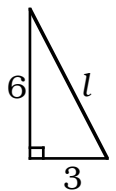
9.5 m 5. $\frac{AC}{EG} = \frac{AB}{EB}$, $\frac{12}{7} = \frac{AB}{14}$, $AB = 24$, $\therefore AE = 10, DE = 5$, $\frac{DF}{EG} = \frac{DB}{EB}$, $\frac{DF}{7} = \frac{19}{14}$, $DF = 9.5$

$\frac{243\sqrt{3}}{2} \text{ in}^2$ 6. $54/6=9$ " on one edge. A regular hexagon is 6 equilateral triangles. One equilateral triangle = $\frac{9^2\sqrt{3}}{4}$. One hexagon = $6 \cdot \frac{9^2\sqrt{3}}{4} = \frac{243\sqrt{3}}{2}$

628 in^2 7. $d = 10$, $r = 5$, $S.A. = 2\pi 5^2 + 2\pi \cdot 5 \cdot 15 = 628.3$

$15\sqrt{42}$ 8. $\sqrt{9450} = \sqrt{2 \cdot 3 \cdot 3 \cdot 3 \cdot 5 \cdot 5 \cdot 7} = 3 \cdot 5 \sqrt{42} = 15\sqrt{42}$

$(36 + 36\sqrt{5}) \text{ in}^2$ 9. To find the slant height use $l = \sqrt{3^2 + 6^2} = \sqrt{45} = 3\sqrt{5}$. Base = $6 \times 6 = 36$
or $36(1 + \sqrt{5}) \text{ in}^2$ Sides = $4\left(\frac{1}{2} \cdot 6 \cdot 3\sqrt{5}\right) = 36\sqrt{5}$. Total surface area = $36 + 36\sqrt{5}$



\$79.88 10. $(0.75x)(0.75)(1.075) = 48.30$, $0.604875x = 48.30$, $x = 79.8759$
Check: $\$79.88 \times 0.75 \times 0.75 \times 1.075 = \48.30