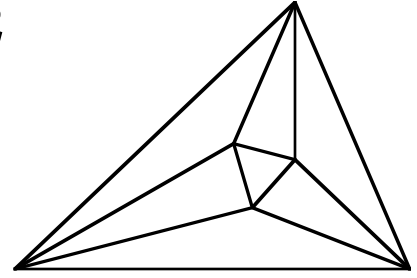


Meet 4 - Event A 2011-2012

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

NO CALCULATORS ALLOWED



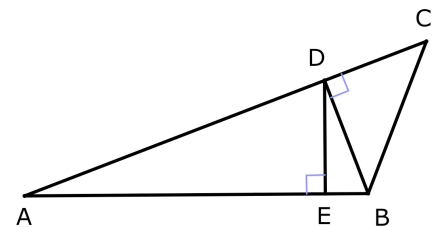
 ⁻¹⁰⁰ ⁻⁹⁰ 1. Insert the correct inequality sign between the two integers.

 2. What is the length of the diagonal of a square of side length $2\sqrt{15}$ m, in simplified radical form?

 3. What is the x -intercept of $3x - 4y = 12$?

 4. There are four circles inside an 8" by 8" square. If they are of equal size, what is the largest possible area of one of the circles? Answer in terms of π .

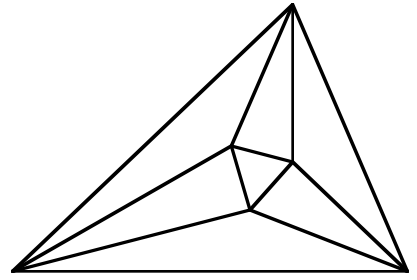
 5. There are 5 triangles in this figure. Which 3 are similar to each other?



Meet 4 - Event A 2011-2012

Answers

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



$-100 < -90$ 1.

$\frac{2\sqrt{30} \text{ m}}{(-1 \text{ if no units})}$ 2. $\sqrt{(2\sqrt{15})^2 + (2\sqrt{15})^2} = \sqrt{4 \cdot 15 + 4 \cdot 15} = \sqrt{120} = 2\sqrt{30}$

$\frac{4}{(\text{or } (4, 0))}$ 3. For x -intercept, $y = 0$, $3x = 12$, $x = 4$

$\frac{4\pi \text{ in}^2}{(-1 \text{ if no units})}$ 4. Circle diameters could be 4", so $r = 2$ ", $A = \pi(2)^2 = 4\pi \text{ in}^2$

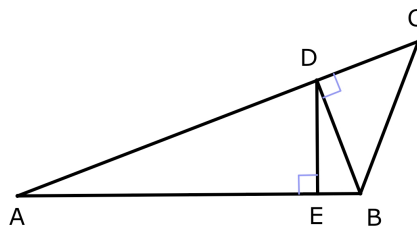
ΔAED 5.

ΔDEB

ΔADB

(In any order)

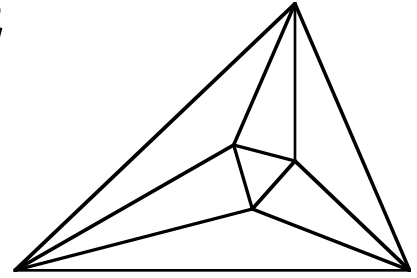
(Must have all 3)



Meet 4 - Event B 2011-2012

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

NO CALCULATORS ALLOWED



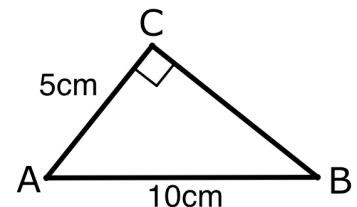
_____ 1. Solve for x : $3 - x < 15$

_____ 2. Simplify: $\sqrt{14400}$

_____ 3. If two points on a line are $(4, 0)$ and $(0, 5)$, what is the equation of the line, in slope-intercept form?

_____ 4. What is the equation of the line parallel to $y = \frac{3}{4}x - 2$ that passes through the point $(8, 1)$?

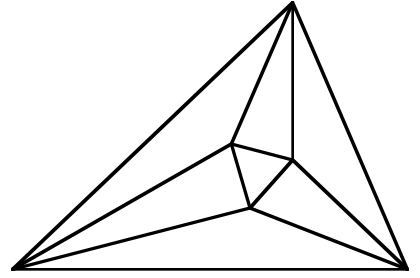
_____ 5. What is the exact value of the area of right triangle ABC ?



Meet 4 - Event B 2011-2012

Answers

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



$x > -12$ 1. $3 - x < 15, -x < 12, x > -12$

120 2. $\sqrt{14400} = \sqrt{144 \cdot 100} = 12 \cdot 10$

$y = -\frac{5}{4}x + 5$ 3. Slope = $\frac{5-0}{0-4} = -\frac{5}{4}$, y -intercept = 5, $y = -\frac{5}{4}x + 5$

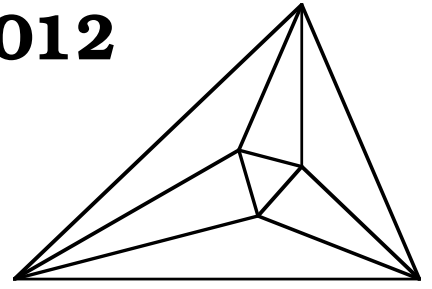
$y = \frac{3}{4}x - 5$ 4. Parallel lines have the same slope, so $y = \frac{3}{4}x + b$. Put in (8, 1).

$$1 = \frac{3}{4}(8) + b, 1 = 6 + b, b = -5$$

$\frac{25\sqrt{3}}{2} \text{ cm}^2$ 5. $BC = \sqrt{10^2 - 5^2} = \sqrt{75} = 5\sqrt{3}$, $Area = \frac{1}{2}bh = \frac{1}{2} \cdot 5 \cdot 5\sqrt{3} = \frac{25\sqrt{3}}{2} \text{ cm}^2$
(-1 if no units)

Meet 4 - Team Event 2011-2012

Questions are worth 4 points each.
Remember your units.



NO CALCULATORS ALLOWED

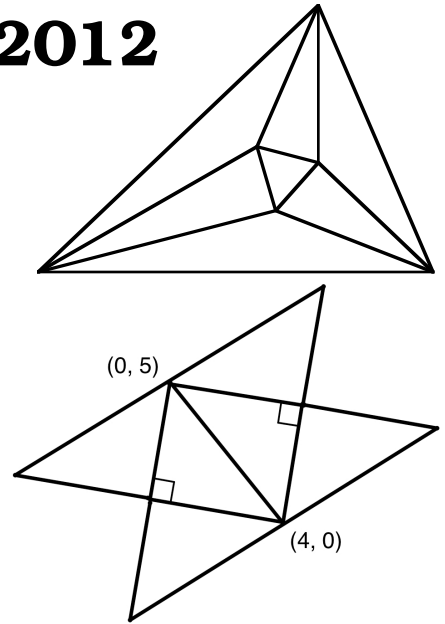
- _____ 1. If the area of one regular hexagon is 25 times as large as the area of a second regular hexagon, how many times larger is one side?
- _____ 2. If $(4, 0)$ and $(0, 5)$ are two vertices of an isosceles right triangle, how many right triangles can this be true of?
- _____ 3. What is the equation of the line perpendicular to $y = \frac{3}{4}x - 2$ that passes through $(9, 1)$?
- _____ 4. What is the area of a triangle formed by $x = 1$, $y = -2$, and $y = x$?
- _____ 5. Solve for x : $|2x - 3| > 5$.
- _____ 6. What is the total surface area of a cylinder of radius 3 cm and height 2 cm, in terms of π ?
- _____ 7. What is the slope of this line: $\frac{3}{4}x - \frac{2}{5}y = 8$?
- _____ 8. Write the absolute value inequality for $3 \leq x \leq 9$.
- _____ 9. What is the area of a triangle formed by $y = x - 4$, $y = -x$, and $y = \frac{1}{2}x$?
- _____ 10. If the total surface area of a cube is 384 cm^2 , what is the length of one edge?

Meet 4 - Team Event

2011-2012

Answers

Questions are worth 4 points each.
Remember your units.



5 1. $\sqrt{25} = 5$

6 2. Two with the points the ends of the hypotenuse, and four with the points being the ends of a leg.

$y = -\frac{4}{3}x + 13$ 3. Slope = $-\frac{4}{3}$, $1 = -\frac{4}{3} \cdot 9 + b$, $1 = -12 + b$, $b = 13$.

$\frac{9}{2}$ units²
or $4\frac{1}{2}$ units² 4. The vertices are at (1, -2), (1, 1) and (-2, -2), so the base is $|-2 - 1| = 3$, height is $|1 - -2| = 3$, Area = $\frac{1}{2} \cdot 3 \cdot 3 = \frac{9}{2}$

$x < -1$ or $x > 4$ 5. $2x - 3 > 5, 2x > 8, x > 4$ OR $2x - 3 < -5, 2x < -2, x < -1$
OR $x > 4$ or $x < -1$

30π cm² 6. Bases = $2(\pi \cdot 3^2) = 18\pi$, Lateral area = $2 \cdot \pi \cdot 3 \cdot 2 = 12\pi$, T.A. = 30π cm²

$\frac{15}{8}$ 7. $20\left(\frac{3}{4}x - \frac{2}{5}y\right) = 20 \cdot 8, 15x - 8y = 160, \frac{-8}{-8}y = \frac{-15}{-8}x + \frac{160}{-8}, y = \frac{15}{8}x - 20$

$|x - 6| \leq 3$ 8. The center value is $\frac{3+9}{2} = 6$ and 3 and 9 are both 3 units from 6, so
 $|x - 6| \leq 3$

12 units² 9. The intersections are at (2, -2), (0, 0), and (8, 4) and the right angle is at (2, -2), so calculate the two legs. $\sqrt{2^2 + (-2)^2} = \sqrt{8}$ and $\sqrt{6^2 + 6^2} = \sqrt{72}$.
Area = $\frac{1}{2} \sqrt{8} \sqrt{72} = \frac{1}{2} \sqrt{8(8 \cdot 9)} = \frac{1}{2} \sqrt{64 \cdot 9} = \frac{1}{2} \cdot 8 \cdot 3 = 12$ units²

8 cm 10. $384 = 6 \cdot 64 = 6 \cdot 8^2$, edge = 8 cm