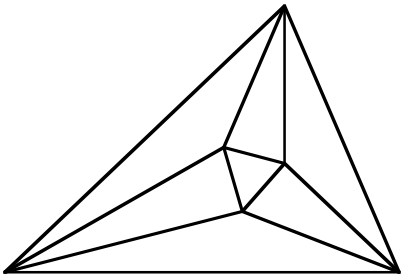
Meet 4 - Event A 2009-2010



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

NO CALCULATORS ALLOWED

_____1. Simplify: $\sqrt{48}$.

_____2. Solve for x: $|x| > 4$.

_____3. Solve for x: $3 - 2x > 9$.

_____4. What is the surface area of a box 6 inches high, 1 foot wide, and 1 foot 6 inches deep?

_____5. When Maggie has driven 20 miles the time is 2:30 pm. After driving another 30 miles, the time is 3:00 pm. When did the trip start if Maggie is using her cruise control to drive at a steady rate?

Name_____School_____

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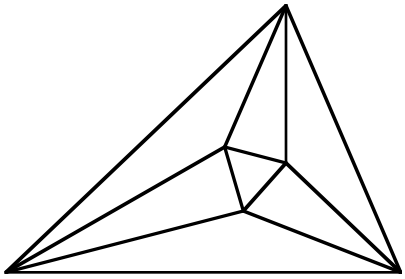
Meet 4 - Event A 2009-2010

Answers



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

$4\sqrt{3}$ 1. $\sqrt{48} = \sqrt{16 \cdot 3} = 4\sqrt{3}$

$x > 4, x < {}^{-}4$ 2. $x > 4$ or $x < {}^{-}4$ NOT: $-4 > x > 4$
(both answers required)

$x < {}^{-}3$ 3. $3 - 2x > 9, \quad -2x > 6, \quad x < {}^{-}3$

792 sq. in. or $5\frac{1}{2}$ sq. ft. 4. The box is $6" \times 12" \times 18"$ or $\frac{1}{2}' \times 1' \times \frac{3}{2}'$

$2(6 \times 12) + 2(6 \times 18) + 2(12 \times 18) = 2(72) + 2(108) + 2(216) = 144 + 216 + 432 =$ 792 sq. in. or

$2\left(\frac{1}{2} \times 1\right) + 2\left(\frac{1}{2} \times \frac{3}{2}\right) + 2\left(1 \times \frac{3}{2}\right) = 1 + \frac{3}{2} + 3 = 5\frac{1}{2}$ sq. ft.

(-1 pt. if no units)

2:10 pm 5. $Rate = \frac{30 \text{ miles}}{0.5 \text{ hrs}} = 60 \text{ mph}, \quad \frac{20 \text{ miles}}{60 \text{ mph}} = \frac{1}{3}$ hr=20 min, 2:30-0:20=2:10 pm

(-1 pt. if no units) (or 14:10 if you use a 24 hour clock, units not required)

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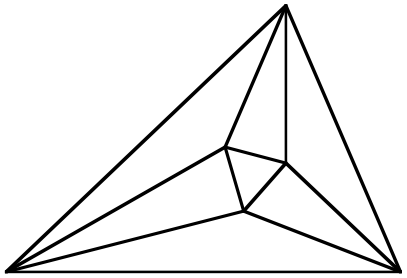
Meet 4 - Event B 2009-2010

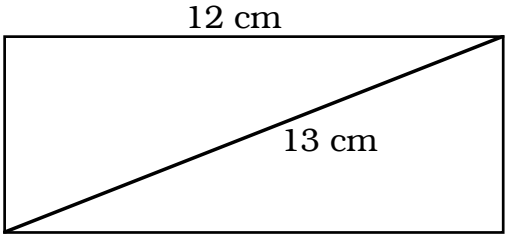


Questions are worth 2-2-2-4-4 points respectively.
Remember your units.

NO CALCULATORS ALLOWED

_____1. How many square inches are in one square foot?

_____2. If the diagonal of a rectangle is 13 cm and one side is 12 cm, what is the other side?



_____ units 3. What is the distance from $A(3, 10)$ to $B(6, 6)$?

_____4. What point is not on the line that the others are on?
(2, 5), (3, 8), (4, 11), (6, 17), (8, 20)

_____ units^2 5. What is the area enclosed by $x = 0, y = 0, x = 4,$ and $y = -2x + 10$?

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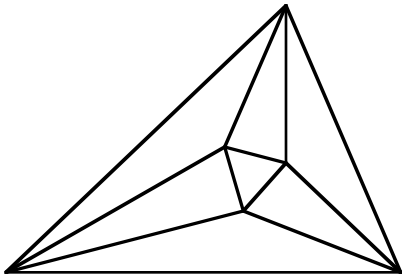
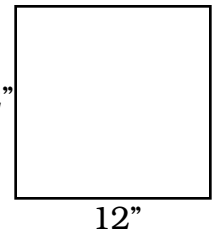
Meet 4 - Event B 2009-2010

Answers



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

144 or 144 sq in 1. $12" \times 12" = 144$ sq. in.



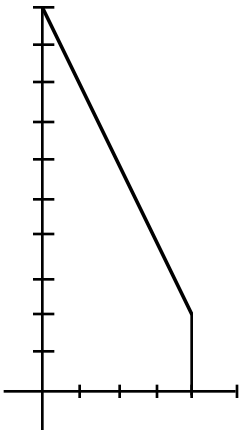
5 cm 2. $x^2 + 12^2 = 13^2, \quad x^2 + 144 = 169, \quad x^2 = 25, \quad x = \sqrt{25} = 5$
(-1 pt. if no units)

5 units 3. $d = \sqrt{(6-3)^2 + (6-10)^2} = \sqrt{9+16} = \sqrt{25} = 5$

(8, 20) 4. As x increases by 1, y increases by 3 except (6, 17) to (8, 20) has x increases by 2 as y increases by 3.

24 units^2 5. When x=0, y=10. When x=4, $y = -8 + 10 = 2$. So the shape is a trapezoid with $b_1 = 10, b_2 = 2,$ and $h = 4$.

$$A = h\left(\frac{b_1 + b_2}{2}\right) = 4\left(\frac{10+2}{2}\right) = 4(6) = 24$$



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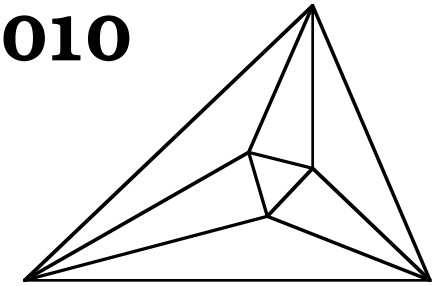


Questions are worth 4 points each.
Remember your units.

NO CALCULATORS ALLOWED

_____1. What is the area of ΔABC if $A=(5,3), B=(0,0), C=(-6,10)$? Simplify your answer.

_____2. What is the perimeter of ΔABC in question 1? Simplify your answer

_____3. Simplify: $\sqrt{64000}$.

_____4. Write as an inequality: x is not more than 6.

_____5. What is the slope of this line: $\frac{x}{3}-\frac{y}{2}=1$?

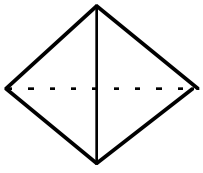
_____6. Write as an inequality: six less than a number, n, is less than twice the number. DO NOT SOLVE FOR n.

_____7. A 3-4-5 right triangle has one vertex at (2, 5) and another at (6, 2). Where are the other two possible vertices with integer coordinates?

_____8. Where do these two lines intersect: $y=3x-4$ and $y=2x+8$?

_____9. What is the total surface area of a can with a diameter of 6 cm and a height of 6 cm?

_____10. A tetrahedron is made of four equilateral triangles with sides of 3 cm. What is the surface area?



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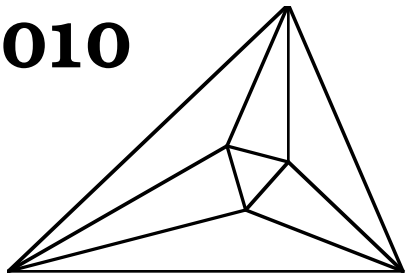
Answers



Questions are worth 4 points each.
Remember your units.

34 units^2 1. Slope of $AB = \frac{3}{5}$, slope of $BC = -\frac{5}{3}$, so $\angle B = 90^\circ$. $AB = \sqrt{25+9} = \sqrt{34}$

$BC = \sqrt{36+100} = \sqrt{136}, \quad A = \frac{1}{2}\sqrt{34}\sqrt{136} = \frac{1}{2}\sqrt{34}\sqrt{34 \cdot 4} = \frac{1}{2} \cdot 34 \cdot 2 = 34$

$(3\sqrt{34} + \sqrt{170})$ units 2. $AB = \sqrt{34}$, $BC = \sqrt{136}$, $AC = \sqrt{121+49} = \sqrt{170}$, $\sqrt{34} + 2\sqrt{34} + \sqrt{170} = 3\sqrt{34} + \sqrt{170}$

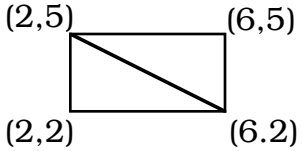
$80\sqrt{10}$ 3. $\sqrt{64000} = \sqrt{64 \cdot 100 \cdot 10} = 8 \cdot 10\sqrt{10} = 80\sqrt{10}$

$x \le 6$ 4. x could be 6 or 5 or 4....

$\frac{2}{3}$ 5. $2x - 3y = 6, -3y = -2x + 6, y = \frac{2}{3}x - 2$

$n - 6 < 2n$ 6. $n - 6 < 2n$

(2,2),(6,5) 7. $\sqrt{(6-2)^2 + (2-5)^2} = \sqrt{16+9} = \sqrt{25} = 5$ So the distance between the given points is 5. (6,5) and (2,2)
Both (4.88,5.84) and (3.12,1.16) are possible but are not integer coordinates.



(12,32) 8. $3x - 4 = 2x + 8$ (same y value), $x - 4 = 8$, $x = 12$, $y = 3(12) - 4 = 36 - 4 = 32$

$54\pi \text{ cm}^2$ 9. $S.A. = 2\pi r^2 + 2\pi rh = 2\pi \cdot 3^2 + 2\pi \cdot 3 \cdot 6 = 18\pi + 36\pi = 54\pi$

$9\sqrt{3} \text{ cm}^2$ 10. $A = \frac{s^2\sqrt{3}}{4} = \frac{9\sqrt{3}}{4}$ for one triangle. $4\left(\frac{9\sqrt{3}}{4}\right) = 9\sqrt{3}$ for the tetrahedron

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