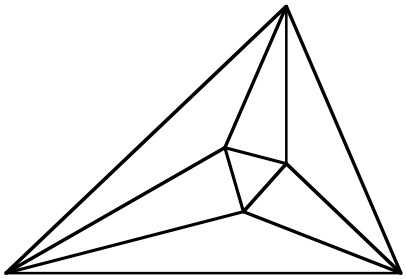
# Meet 3 - Event A 2005-2006



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

_____1. Solve for $x$ as a decimal:

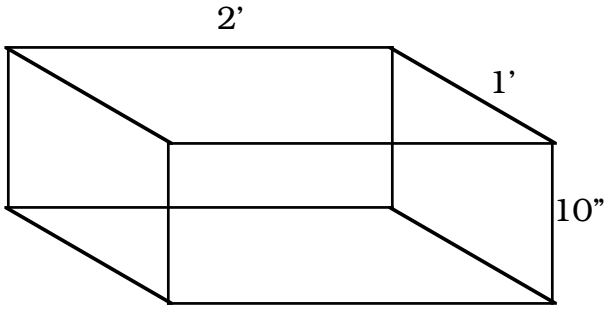
$$4x - 5 = 20$$

_____2. What percent of 10 is 15?

_____3. Solve for $x$:

$$\frac{x}{2.5} = \frac{3.85}{13.75}$$

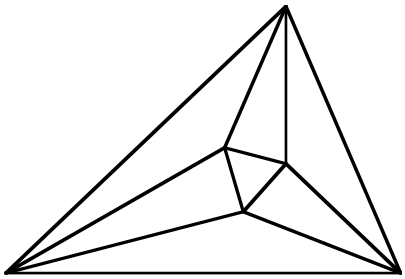
_____4. Michael made a cage for his pet hamster. It was 2 feet long, 1 foot wide, and 10 inches deep. If he used metal rods for the edges, how much metal rod did he need? Answer in feet and inches.




_____5. Nancy can mow the lawn in 1 hour, and Sarah can mow the lawn in 1 hour. If they each have a lawn mower and work together, how long will it take them to mow the lawn?

Name_____School_____

# Meet 3 - Event A 2005-2006 Answers



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

6.25 1. $4x = 25,\ x = \frac{2.5}{4} = 6.25$

150% 2. $\frac{15}{10} \times 100 = 150\%$

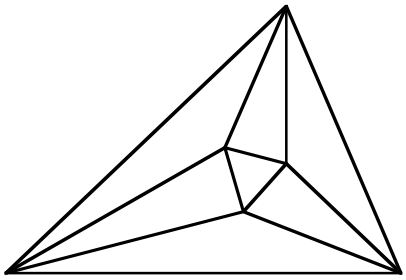
0.7 3. $x = \frac{2.5 \bullet 3.85}{13.75} = 0.7$

15 ft. 4 in. 4.
$24" \times 4 = 96$
$12" \times 4 = 48$
$10" \times 4 = 40$
$184" = 15'4"$

30 min. 5. In 30 minutes, Nancy mows half the lawn while Sarah mows the other half.

or $\frac{1}{2}$ hour

# Meet 3 - Event B 2005-2006



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

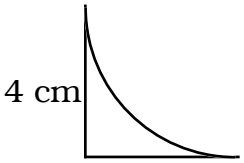
_____1. Rewrite $2\frac{18}{48}$ as a quotient of relatively prime numbers.

_____2. Solve for $x$:

$$3(x-2)=x+10$$

_____3. Sally's grandmother lives 220 miles from Sally. If Sally averages 55 mph, how long will the trip take?

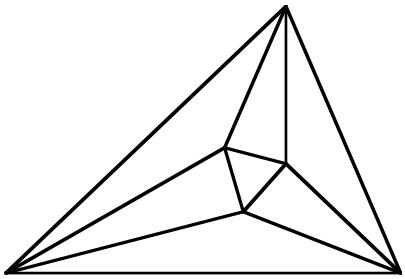
_____4. A quarter circle was cut out of a square to make the shape shown. If one straight edge is 4 cm, what is the perimeter of this shape to the nearest hundredth?




_____5. Mia has five chains, each three links long. What is the smallest number of links she must open to make one long chain?

Name_____School_____

# Meet 3 - Event B 2005-2006
# Answers



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

$\frac{19}{8}$ 1. $2\frac{18}{48} = 2\frac{3}{8} = \frac{19}{8}$

8 2. $3x - 6 = x + 10, \quad 2x = 16, \quad x = 8$

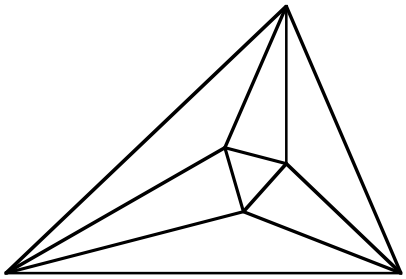
4 hours 3. $\frac{220 \text{ mi}}{55 \text{ mph}} = 4 \text{ hours}$

14.28 cm 4. The radius of the circle is 4 cm.

$\frac{1}{4}C = \frac{1}{4}(2\pi 4) = 2\pi = 6.28, \quad P = 4 + 4 + 6.28 = 14.28 \text{ cm}$

3 5. Open all three links in one chain and use them to connect the other four chains.

# Meet 3 - Event C 2005-2006



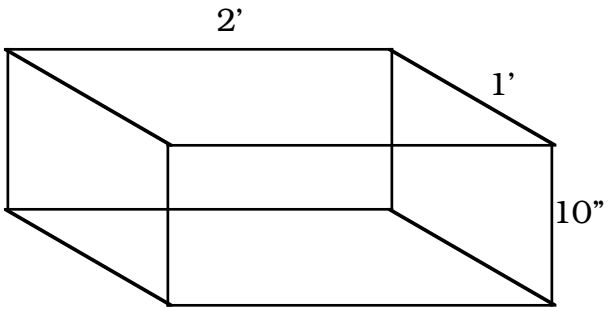
Questions are worth 2-2-2-4-4 points respectively.
Remember your units.

_____1. Solve for $y$: $3x + 2y = 5$

_____2. Solve for $x$ as a quotient of relatively prime numbers:
$8(3 - 2x) = 17 - 2(x + 3)$

_____3. If a rectangle has a length equal to twice the width and a perimeter of 36 inches, what is the width?

_____4. Michael made a cage for his pet hamster. It was 2 feet long, 1 foot wide, and 10 inches deep. If he used metal rods for the edges, how much metal rod did he need? Answer in feet and inches.

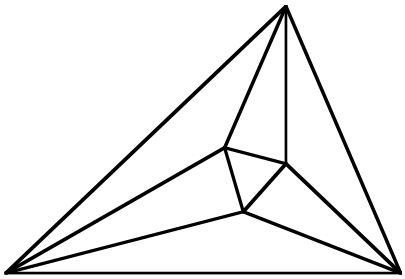



_____5. Nancy can mow the lawn in 1 hour, and Sarah can mow the lawn in 1 hour. If they each have a lawn mower and work together, how long will it take them to mow the lawn?

Name_____School_____

# Meet 3 - Event C 2005-2006

# Answers



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

$\frac{5-3x}{2}$ 1. $2y = 5 - 3x, \quad y = \frac{5-3x}{2}$, or equivalent answer

$\frac{13}{4}$ 2. $24 - 6x = 17 - 2x - 6 = 11 - 2x, \quad 13 = 4x, \quad x = \frac{13}{4}$

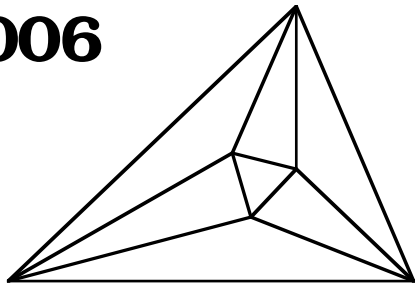
6 inches 3. $36 = 2(w + 2w) = 2(3w), \quad 36 = 6w, \quad w = 6$ inches

15 ft. 4 in. 4.
$$\begin{aligned} 24" \times 4 &= \ 96 \\ 12" \times 4 &= \ 48 \\ 10" \times 4 &= \ 40 \\ \hline & 184" = 15'4" \end{aligned}$$

30 min. 5. In 30 minutes, Nancy mows half the lawn while Sarah mows the other half.

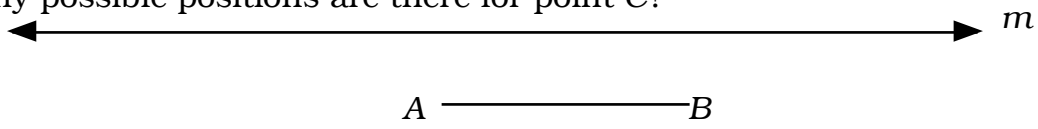
or $\frac{1}{2}$ hour

# Meet 3 - Team Event 2005-2006



Questions are worth 4 points each.
Remember your units.

_____1. Triangle *ABC* is isosceles (two sides are equal). Point *C* is on line *m*. How many possible positions are there for point *C*?

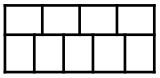



_____2. How long does it take the hour hand of a clock to move through one degree of arc?

_____3. What are the last two digits in $2006^{2005}$ ?

_____4. A poorly made car costing $24000 depreciates (loses value) by 40% in each of its first three years. What is its value at the end of the third year?

_____5. The large rectangle has an area of 180 inches squared and consists of 9 rectangles that are the same size. Find the perimeter of the large rectangle.



_____6. Solve for *x*: $5.1(x+3.5)=3(2x-15)$.

_____7. A map has a scale of 15 miles:1 cm. What distance does 5.8 cm on the map represent?

_____8. In Mytown Middle school only $\frac{1}{4}\%$ of the students were six feet or taller. If the school had 400 students, how many are six feet or taller?

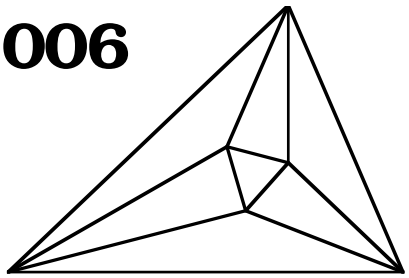
_____9. The East-bound train, traveling 65 mph, left Centerville at noon and the West-bound train, traveling at 50 mph left Mytown at noon. If the distance from Mytown to Centerville is 300 miles, when will the trains meet?

_____10. If the area of a square is 49 square inches, what is the perimeter?

 School_____

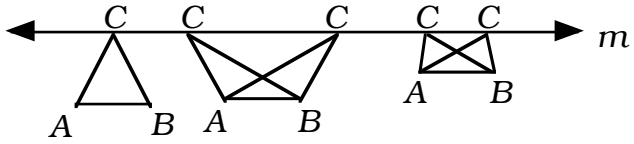
# Meet 3 - Team Event 2005-2006

# Answers



Questions are worth 4 points each.
Remember your units.

5 1.




2 minutes 2. One hour = 60 min. and the hour hand moves 1/12 of the circle.

$$\frac{1}{12}\times 360^\circ = 30^\circ \text{ so } \frac{30^\circ}{60\text{ min}} = \frac{1}{2}{}^\circ\!/_{\text{min}} \quad \therefore \text{ 2 minutes}$$

76 3. $2006^1 \equiv 06$ $2006^3 \equiv 16$ $2006^5 \equiv 76$ $2006^7 \equiv 36$ Except for $2006^1$, the last two digits repeat every five numbers.
$2006^2 \equiv 36$ $2006^4 \equiv 96$ $2006^6 \equiv 56$ $2006^8 \equiv 16$
2005 is a multiple of 5, so 76 is the answer.

$5184 4. $24000(0.6) = 14400,\ 14400(0.6) = 8460,\ 8460(0.6) = 5184$

58 in. 5. $180 = 10\times 18$ or $9\times 20$ or $6\times 30$, etc. Since opposite sides are equal,

$4l = 5w,\ l = \frac{5}{4}w$ and $4l(w+l) = 180,\ 5w(w+l) = 180,$ so:

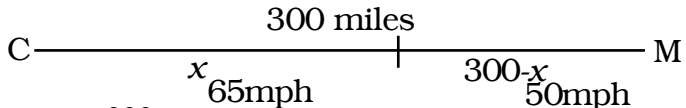
$$5w\left(w+\frac{5}{4}w\right) = 180,\ 5w^2 + \frac{25}{4}w^2 = 180,\ \frac{45}{4}w^2 = 180,\ w^2 = 180\times\frac{4}{45} = 16$$

so $w = 4, l = 5,\ P = 9+20+9+20 = 58$ in.

$69.8\overline{3}$ 6. $5.1x + 17.85 = 6x - 45,\ 62.85 = 0.9x,\ x = 69.8\overline{3}$
or $69\ 5/6$

87 miles 7. $15\times 5.8 = 87$

1 8. $\frac{1}{4}\% = 0.25\% = 0.0025,\ 0.0025\times 400 = 1$




2:36 PM 9. $t = \frac{x}{65} = \frac{300-x}{50},\ 50x = 19500 - 65x,\ 115x = 19500,\ x = 169.56\text{miles},$

$\frac{169.56}{65} = 2.6\text{hours} = 2\text{hr } 36\text{min}$

28 inches 10. $x^2 = 49,\ x = 7,\ P = 4(7) = 28$