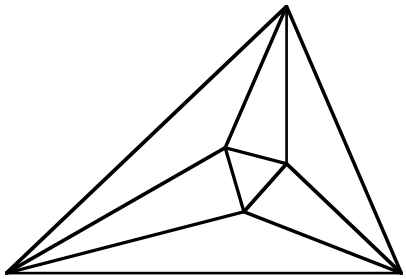
Meet 3 - Event A 2012-2013



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

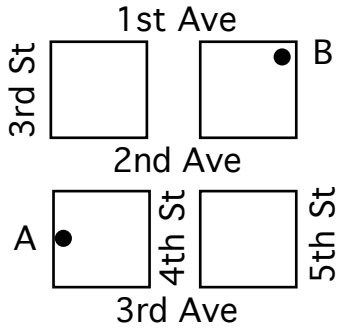
NO CALCULATORS ALLOWED

_____1. What is 110% of 80?

_____2. Solve for x: $\frac{3(x-2)}{15} = \frac{2}{5}$.

_____3. What is the perimeter of a rectangle twice as long as it is wide if the long side is 100 inches?

_____4. Alice lived on 3rd St, in the middle of the block, on the west side between 2nd Ave. and 3rd Ave., and Beth lived at the southwest corner of the intersection of 5th St. and 1st Ave. How far must Alice walk to get to Beth's house? Alice stays on the side of the road and uses the crosswalks and goes the shortest route. The blocks are 400 feet long, and the streets are 100 feet wide.



_____5. How many "shortest way" paths are there for Alice to take in problem 4?

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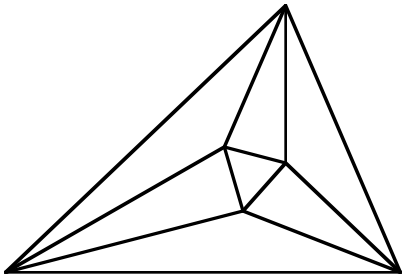
Answers



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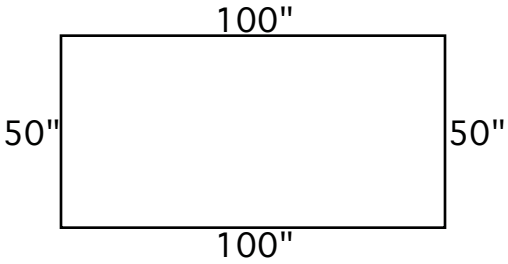
Remember your units.

88 1. $1.10 \times 80 = 88.00$

4 2. Since $15 = 5 \cdot 3$, $3(x-2) = 2 \cdot 3$, $3x - 6 = 6$, $3x = 12$, $x = 4$

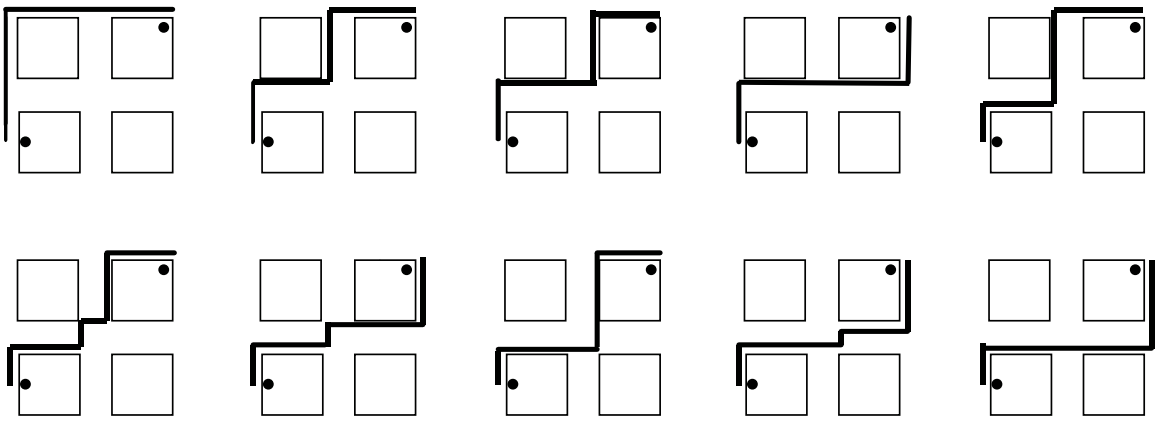
300" or 300 in. (-1 if no units) 3.



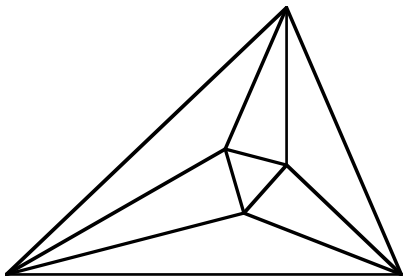
$P = 300$ inches

1600 ft. (-1 if no units) 4. Alice must go 3.5 block lengths and cross two streets to go directly to Beth's house, so $3.5(400) + 2(100) = 1400 + 200 = 1600$ feet

10 5.



Meet 3 - Event B 2012-2013



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

NO CALCULATORS ALLOWED

_____mph 1. Mia rides two miles in ten minutes on her bicycle. What is her speed in miles per hour?

_____ 2. If you write $2x - 3y = 12$ in the form of $y = mx + b$, what is the value of m?

_____% 3. If shoes regularly priced at $50 are sold for $30, what percent is the discount?

_____ 4. Jason bought 6 cases of 144 candy bars each for $48 per case. If he sold the candy bars for $1.00 each, what would be his profit?

_____ 5. If Jason bought c cases of 144 candy bars each for $48 per case, and he sold the candy bars for $1.00 each, write an equatiion for his profit, P, in simplest form.

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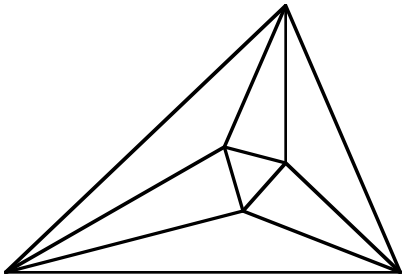
Answers



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

12 mph 1. 10 minutes = $\frac{1}{6}$ hour, so 2 miles $\div$ $\frac{1}{6}$ hour = $2 \times \frac{6}{1} = 12$

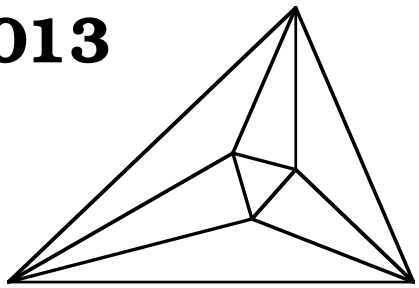
$\frac{2}{3}$ 2. $2x - 3y = 12, \quad -3y = -2x + 12, \quad y = \frac{2}{3}x - 4$

40% 3. \$50 − \$30 = \$20 discount, $\frac{20}{50} = 0.40 = 40\%$

\$576 4. 6(144) = 864 candy bars, 6(\$48)=\$288 cost, profit =\$864(from sales) − \$288(cost)=\$576
(−1 if no \$)

$P = \$96c$ 5. $P = \$1(144)c(\text{income}) - \$48c(\text{cost}), \ P = \$96c$.
or $P = 96c$
(since units aren't
usually included in equations)

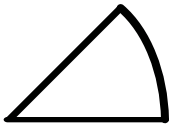
Meet 3 - Team Event 2012-2013



Questions are worth 4 points each.
Remember your units.

NO CALCULATORS ALLOWED

_____1. If the price of a sweater is decreased by 10%, and then increased by 10%, what percent of the original price is the new price?



_____2. If an eight inch pie is cut in to eight equal pieces, what is the perimeter of one piece? Answer in terms of π.

_____3. Jenni needed 144 squares 7 1/2 inches on a side to make a quilt. Half were plain fabric, half were flowered fabric. If each roll of fabric is 43 inches wide, what length of plain fabric does she need, to the nearest 1/8 of a yard

_____4. A bag of candy cost $2.50 and the sales tax was 8%. What is was the total cost of the candy?

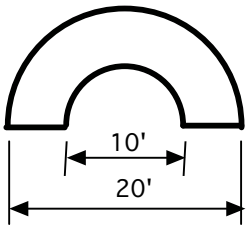
_____5. The doctor charges $120 for the initial visit, and $45 per visit after that. Write an equation for the total cost, *c*, in terms of the number of visits, *n*.

_____6. The student council spent $100 hiring a DJ to play music, and $50 for a custodian to clean up. They expected to sell 100 tickets and were planning on making $200 in profit. How much should each ticket cost?

_____7. Solve for *x* as a fraction: $\dfrac{1}{\left(\dfrac{1}{\left(\dfrac{1}{x}\right)}\right)} = \dfrac{3}{4}$.

_____% 8. When a group of mathletes went to a Twins game, along with the tickets they got a brochure saying they could buy a coupon for $3.50 that would be good for a hot dog and a soda. If the regular price was $5.00, what percent was the savings?

_____9. How much fencing is needed to go around a garden in the shape of an arc made by two semicircles and two end pieces if the outer circle has a diameter of 20 feet and the inner circle has a diameter of 10 feet? Let π=3.14 and answer to the rounded up whole number.



_____10. A race track is 400 meters. If a runner does 10 laps (10 times around the track) in 14 minutes and 45 seconds, what is his speed to the nearest whole number?

 School_____

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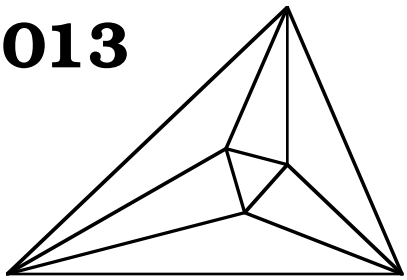
Answers



Questions are worth 4 points each.
Remember your units.

99% 1. 10% decrease gives 90% cost. 10% of 90%=9% for the increase, so 90%+9%=99%

$(\pi + 8)$inches or π"+ 8" NOT π+8" 2. An 8" pie has a radius of 4" and each piece is 1/8 of a circle, so the curved arc is $8\pi \div 8 = \pi$. So $P = 4" + 4" + \pi" = (8 + \pi)\text{inches}$.

$3\frac{1}{8}$ yd 3. $144 \div 2 = 72$ plain squares. $6(7.5) = 45"$, so only 5 squares going across.

$72 \div 5 = 14\,2/5$, so 15 rows down the length. $15 \times 7.5 = 112.5"$

$112.5" \div 36"/yd = 3.125$ yds=$3\ 1/8$ yds

\$2.70 $ required 4. $\$2.50(1.08) = \$2.70$

$C = 120 + 45(n-1)$ or $C = 75 + 45n$ 5. $C = 120 + 45(n-1) = 120 + 45n - 45$

\$3.50 $ required 6. $200 = 100p - 100 - 50, \quad 350 = 100p, \quad p = \$3.50$

$\frac{4}{3}$ 7. $\dfrac{1}{\left(\dfrac{1}{\left(\frac{1}{x}\right)}\right)} = \dfrac{1}{1 \bullet \frac{x}{1}} = \dfrac{1}{x} = \dfrac{3}{4}, \quad x = \dfrac{4}{3}$

30% 8. $\$5.00 - \$3.50 = \$1.50$ savings, $\dfrac{1.50}{5.00} = 0.30 = 30\%$

58 feet units required 9. Inner semicircle length $= 10\pi \div 2 = 5\pi$. Outer semicircle length $= 20\pi \div 2 = 10\pi$
Straight pieces $= 20' - 10' = 10'$, $P = 15\pi + 10 = 47.1 + 10 = 57.1$ or 58 feet

271 m/min 10. 14 m 45 s =14.75 min, 4000 m ÷ 14.75 min = 271 meters per minute