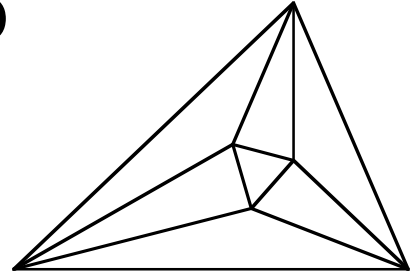


Meet 3 - Event A 2009-2010

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

NO CALCULATORS ALLOWED



_____ 1. Solve for x : $\frac{1}{x} = \frac{7}{5}$.

_____ 2. If the radius of a circle is 5 inches, what is the circumference, in terms of π ?

_____ 3. The treasure map scale is 1 cm = 10 m. If the treasure chest is buried 3.6 cm west of the big rock on the map, how far west of the big rock should you dig for the treasure?

_____ 4. The sweater was discounted 40% and was on sale for \$36. What was the original price?

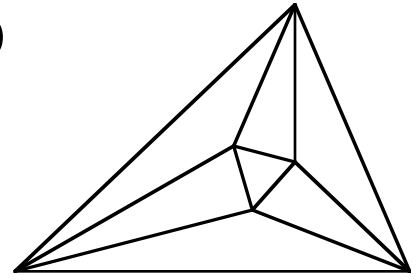
_____ 5. Write in $y = mx + b$ form (reduce any fraction is implied):
 $3x - 4y = 5x - 6$

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Meet 3 - Event A 2009-2010

Answers

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



$$\underline{\frac{5}{7}} \quad 1. \quad \frac{\cancel{x}}{\cancel{x}} = \frac{1(5)}{7} = \frac{5}{7}$$

$$\underline{10\pi \text{ in.}} \quad 2. \quad r = 5 \text{ in.} \quad d = 10 \text{ in.} \quad C = \pi d = 10\pi$$

(-1 pt. if no units)

$$\underline{36\text{m}} \quad 3. \quad \frac{1\text{cm}}{3.6\text{cm}} = \frac{10\text{m}}{x\text{m}}, \quad 1x = 3.6(10), \quad x = 36\text{m}$$

(-1 pt. if no units)

$$\underline{\$60} \quad 4. \quad 100\% - 40\% = 60\%, \quad \frac{\cancel{0.60}x}{\cancel{0.6}} = \frac{36}{0.6} = \frac{360}{6} = \$60$$

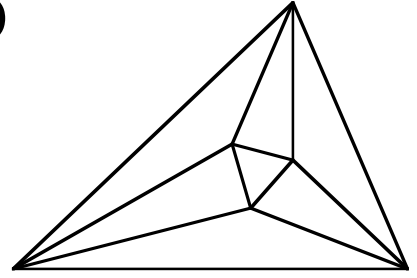
(-1 pt. if no units)

$$\underline{y = -\frac{1}{2}x + \frac{3}{2}} \quad 5. \quad 3x - 4y = 5x - 6, \quad -4y = 2x - 6, \quad y = \frac{2}{-4}x - \frac{6}{-4}, \quad y = -\frac{1}{2}x + \frac{3}{2}$$

Meet 3 - Event B 2009-2010

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

NO CALCULATORS ALLOWED



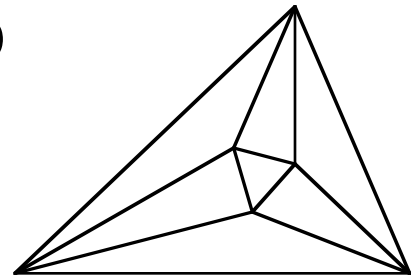
- _____ 1. If Alex stands left of Mary, Cindy stands left of Mary, and Alex is right of Cindy, who is in the middle?
- _____ 2. What is $7\frac{1}{4}\%$ of 20,000?
- _____ 3. If the rectangular garden is 20 feet by 30 feet, what is the perimeter of the garden?
- _____ 4. The Student Council needed to make \$100 from the dance. If the dance costs were \$200 and the tickets were sold for \$10 each, how many tickets must be sold?
- _____ % 5. What percent of the area of a circle is the perimeter?

Name _____ School _____

Meet 3 - Event B 2009-2010

Answers

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



Alex 1. Cindy - Alex - Mary

1450 2. $7\frac{1}{4}\% = 0.0725$, $20,000 \cdot 0.0725 = 2 \cdot 10,000 \cdot 0.0725 = 2 \cdot 725 = 1450$

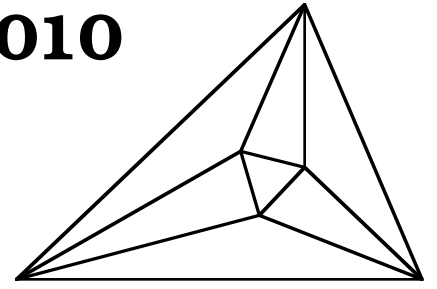
100 feet 3. $P = 2(20) + 2(30) = 40 + 60 = 100$ feet
(-1 pt. if no units)

30 4. $100 = 10t - 200$, $300 = 10t$, $t = 30$

$\frac{200}{r}\%$ 5. $\frac{x}{100} = \frac{2\pi r}{\pi r^2} = \frac{2}{r}$, $rx = 200$, $x = \frac{200}{r}\%$

Meet 3 - Team Event 2009-2010

Questions are worth 4 points each.
Remember your units.



NO CALCULATORS ALLOWED

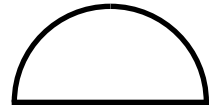
_____ 1. What time is it, to the nearest minute, if the angle between the hands on a clock is 35° , the hour hand is between 4 and 5, and the minute hand is between 5 and 6?

_____ 2. Josh drove 65 mph for 2 hours, then 30 mph for the next 10 miles. What was his average speed?

_____ 3. Solve for x : $3(x + 4) - 2(8 + x) = 10 - x$.

_____ 4. If Sally rides west at 8 mph for 45 minutes and then south at 10 mph for 30 minutes, how far has she ridden on her bicycle?

_____ 5. If the diameter of a circle is 10 cm, what is the perimeter of a semicircle, in terms of π ?



_____ 6. Solve for y : $ax + by = c$.

_____ %7. If a store discounts a table 20%, and a month later discounts the sale price by 30%, what is the final percent discount from the original price?

_____ %8. What percent of 15 is 9?

22		26
27		

_____ 9. In a magic square, the sum of each row, column, and the two major diagonals is the same. Fill in the blanks.

_____ 10. Solve for x as a ratio of relatively prime numbers:

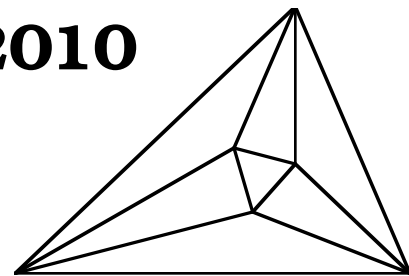
$$9(-2x)^{-2} = 4(3x)^{-1}.$$

Meet 3 - Team Event

2009-2010

Answers

Questions are worth 4 points each.
Remember your units.



4:28 1. $x = \text{min. after 4:00}$. Minute hand moves $6^\circ/\text{min}$, hour hand moves $1/2^\circ/\text{min}$. At 4:00 they are 120° apart

$$6x - (120 + \frac{1}{2}x) = 35, \quad 6x - 120 - \frac{1}{2}x = 35, \quad 5\frac{1}{2}x = 155, \quad \frac{11}{2}x = 155$$

$$x = 155 \times \frac{2}{11} = \frac{310}{11} = 28\frac{2}{11}$$

Intelligent guessing using degrees also works.

60mph 2. $65\text{mph} \times 2\text{h} = 130\text{miles}$, $10\text{mi} \div 30\text{mph} = \frac{1}{3}\text{h}$, $\frac{(130+10)\text{miles}}{(2+1/3)\text{hr}} = \frac{140}{7/3} = 140 \times \frac{3}{7} = 60\text{mph}$

7 3. $3x + 12 - 16 - 2x = 10 - x$, $x - 4 = 10 - x$, $2x = 14$, $x = 7$

11 miles 4. $\frac{8^2 \text{ miles}}{1 \text{ hour}} \times \frac{45^3}{60}$ hour + $\frac{10^5 \text{ miles}}{1 \text{ hour}} \times \frac{30^1}{60}$ hour = $6 + 5 = 11$ miles

$(5\pi + 10)\text{cm}$ 5. $P = \pi d / 2 + d = \pi 10 / 2 + 10 = 5\pi + 10$

$\frac{c - ax}{b}$ 6. $y = \frac{c - ax}{b}$ or $\frac{-ax + c}{b}$ or $\frac{ax - c}{-b}$
or $\frac{-ax + c}{b}$

44% 7. $.7(.8p) = .56p$ is the selling price. $1 - .56 = .44$ is the discount

60% 8. $\frac{9}{15} = \frac{x}{100}$, $x = \frac{900}{15} = 60$

22	21	26
27	23	19
20	25	24

22		26
27	b	c
a		d

$$22 + 27 + 22 = a + b + 26, \quad 49 = b + 26, \quad b = 23$$

$$27 + 23 + a = 26 + a + d, \quad 50 = 26 + d, \quad d = 24$$

$22 + 23 + 24 = 69$ as the sum, so the other terms can be found

$\frac{27}{16}$ 10. $9(-2x)^2 = 4(3x)^{-1}$, $\frac{9}{4x^2} = \frac{4}{3x}$, $\frac{4 \cdot 4x^2}{16x} = \frac{3x \cdot 9}{16x}$, $x = \frac{3 \cdot 9}{4 \cdot 4} = \frac{27}{16}$