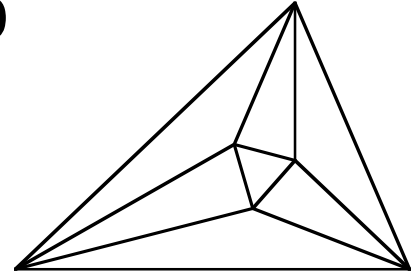


Meet 3 - Event A 2008-2009

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



_____ 1. Solve for x :

$$\frac{3}{8} = \frac{15}{x}$$

_____ 2. The perimeter of a square is 8 cm. What is the length of one side?

_____ 3. Write in $y = mx + b$ form:

$$2y = 4x - 1$$

_____ % 4. If the length of a rectangle is 3 times the width, what percent of the perimeter is the width?

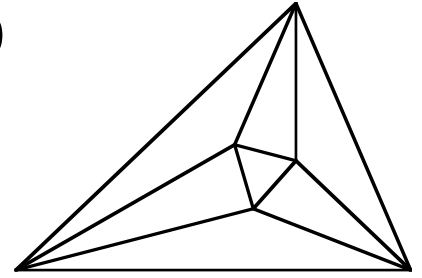
_____ 5. $y = |x + 2|$ can be written as two linear equations with restricted domains.
For $x \geq -2$, $y = x + 2$ is true. What is the linear equation when $x < -2$?

Name _____ School _____

Meet 3 - Event A 2008-2009

Answers

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



40 1. $\frac{\cancel{3}x}{\cancel{3}} = \frac{8 \cdot 15}{3}, \quad x = 40$

2 cm 2. $4s = 8, \quad s = 2\text{cm}$
(units required)

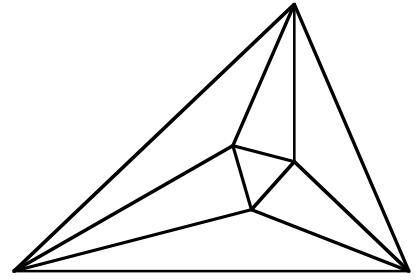
$y = 2x - \frac{1}{2}$ 3. $\frac{\cancel{2}y}{\cancel{2}} = \frac{4x-1}{2}, \quad y = \frac{4}{2}x - \frac{1}{2}, \quad y = 2x - \frac{1}{2}$
or $y = 2x - 0.5$

12.5% 4. $x + 3x + x + 3x = 8x = P, \quad \frac{x}{8x}(100) = \frac{1}{8}(100) = 12.5$

$y = -x - 2$ 5. If you knew the value of y , you would solve for the two x values by writing $y = x + 2$ and $-y = x + 2$, so $y = -x - 2$ is the other equation.

Meet 3 - Event B 2008-2009

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



_____ %1. What percent of 50 is 60?

_____ 2. What is 0.5% of 20?

_____ 3. Solve for y in terms of x :
$$2y - 3x = 8$$

_____ 4. Jason's band wanted to make CD's of its performance. It cost \$350 plus \$3 per CD to make CD's. Write an equation expressing the cost of making CD's, C , as a function of n , the number of CD's made.

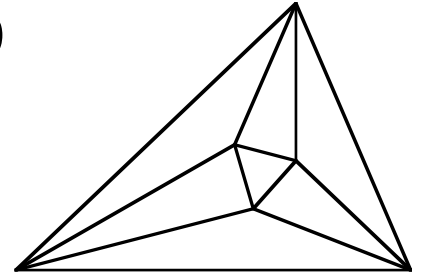
_____ 5. Mia and Sia live 6.75 miles apart. At 3:00 PM they leave home and bike toward the other person's home. Mia bikes at 12 miles per hour and Sia bikes at 15 miles per hour. When do they meet each other on the route?

Name _____ School _____
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Meet 3 - Event B 2008-2009

Answers

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



120% 1. $\frac{x}{100} = \frac{60}{50}, x = 120$

0.1 2. $20 \times 0.005 = 0.1$

$y = 4 + \frac{3}{2}x$ 3. $2y = 8 + 3x, y = 4 + \frac{3}{2}x, \text{ or } y = \frac{8 + 3x}{2}$
or $y = \frac{8 + 3x}{2}$

$C = 350 + 3n$ 4. $C = 350 + 3n$
or $C = 3n + 350$

3:15 PM 5.

	Rate	Distance	Time
Mia	12 mph	x	t
Sia	15 mph	$6.75 - x$	t

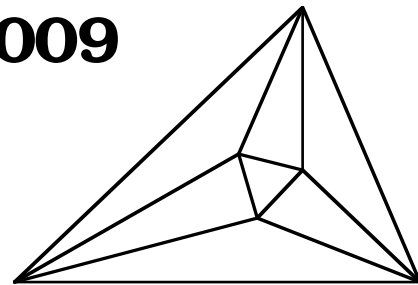
Since the time is the same,

$$\frac{x}{12} = \frac{6.75 - x}{15}, \quad 15x = 81 - 12x, \quad 27x = 81, \quad x = 3 \text{ miles,}$$

$$t = \frac{3}{12} \times 60 = 15 \text{ min.}$$

Meet 3 - Team Event 2008-2009

Questions are worth 4 points each.
Remember your units.



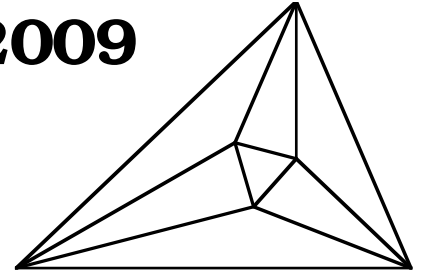
- _____ 1. Write $3x + 4y = 36$ in $\frac{x}{a} + \frac{y}{b} = 1$ form.
- _____ 2. The map scale was 1 cm:30 miles. If the distance from My City to My Town was 5.5 cm on the map, how far apart were they in reality?
- _____ 3. Jackson bought a car for \$6600. The sales tax was 6.75% and the license fee was \$180. What was the total cost of the car? (No tax on license fee.)
- _____ 4. Write in standard form, $Ax + By = C$ where A , B , and C are integers:
- $$y = \frac{2}{3}x + \frac{4}{5}$$
- _____ 5. What is the perimeter of a semicircle of radius 7 cm? Leave your answer in terms of π .
- _____ 6. Marci cut a circle of diameter 6 inches out of a square 6 inches on each side. What is the perimeter of one of the cut off corners, to the nearest tenth?
- _____ hrs 7. Rosita baby sat for 52 hours in July. She charged \$2 for each hour worked before midnight, and \$4 for each hour after midnight. If she earned \$128, how many hours did she work after midnight?
- _____ 8. What is the angle between the hands of a clock at 2:22?
- _____ 9. Sam and Noah live 15 miles apart. At 1:00 PM they bike toward each others house. Sam bikes 12 mph and Noah bikes 15 mph. They each go all the way to the other person's house, then immediately turn around and bike back again. When do they meet on the way back?
- _____ 10. The Surfliner train, traveling 55 mph, overtakes the Coaster on a parallel track traveling 40 mph. The trains pass completely in 1.2 minutes. If the Coaster is twice as long as the Surfliner, how long is the Surfliner?

Meet 3 - Team Event

2008-2009

Answers

Questions are worth 4 points each.
Remember your units.



$\frac{x}{12} + \frac{4}{9} = 1$ 1. To get the 1 on the right, divide by 36.

165 miles 2. $\frac{1}{30} = \frac{5.5}{x}$, $x = 30(5.5) = 165$
(units required)

\$7225.50 3. $6600 \times 0.0675 = 445.50$, $6600 + 445.50 + 180 = 7225.50$

$-10x + 15y = 12$ 4. $15y = 15 \cdot \frac{2}{3}x + 15 \cdot \frac{4}{5}$, $15y = 10x + 12$, $-10x + 15y = 12$ or $10x - 15y = -12$
or $10x - 15y = -12$

$(14 + 7\pi)$ cm 5. $C = 2\pi r = 2\pi(7) = 14\pi$, $\frac{1}{2}C = 7\pi$, $d = 2(7) = 14$, $P = (14 + 7\pi)$ cm
(units required)

10.7 inches 6. $C = d\pi = 6\pi$, $P = \frac{6\pi}{4} + 3 + 3 = 10.71$
(units required)

12 hrs 7. After midnight = x hour. Before midnight = $52 - x$ hours.
 $2(52 - x) + 4x = 128$, $104 - 2x + 4x = 128$, $2x = 24$, $x = 12$

61° 8. From noon, the hour hand has moved $60^\circ + \frac{22}{60} \times 30^\circ = 71^\circ$. From 2:00,
(units required)

the minute hand has moved $\frac{22}{60} \times 360^\circ = 132^\circ$. $132 - 71 = 61^\circ$

2:40 PM 9.

	Rate	Distance	Time
Sam	12 mph	$15+x$	t
Noah	15 mph	$15+(15-x)$	t

$t = \frac{15+x}{12} = \frac{30-x}{15}$

$225 + 15x = 360 - 12x$

$x = 5$

$t = \frac{20}{12} = 1.\bar{6} = 1 \text{ hr } 40 \text{ min}$

0.1 mile 10. The Surfliner is traveling $55 - 40 = 15$ mph w.r.t. the Coaster.
(units required)

$15 \times 1.2/60 = 0.3$ miles. The Surfliner has to travel the length of the Coaster plus it's own length to pass the Coaster, so
 $2x + x = 0.3$, $x = 0.1$ mile