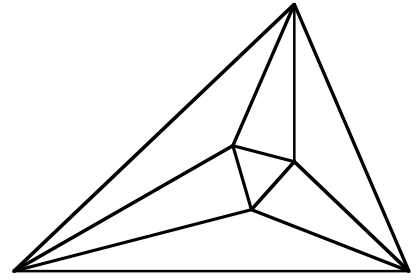# Meet 3 - Event A   2006-2007

Questions are worth 2-2-2-4-4 points respectively.
<u>Remember your units.</u>

_____1. Solve for x as a quotient of relatively prime numbers:
$$6x + 15 = 11$$

_____2. Jack bought 9 roses of the 4 dozen roses in the flower shop. What percent of the roses did Jack buy?

_____3. What is 15% of 150?

_____4. The fence around the rectangular garden was 100 feet long. If one side of the garden was 15 feet, how long was the other side?
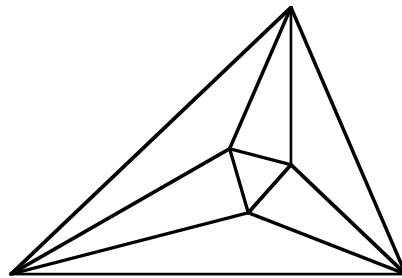
_____5. Sandra drove 55 mph for 45 minutes and then 75 mph for 1 hour 30 minutes to get to the cabin. How far away was the cabin, to the nearest whole number? (Ignore the time she lost when she was stopped for speeding.)

Name_____School_____

Meet 3 - Event A   2006-2007 Answers

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

Graders are reminded to check the rules regarding partial credit for missing units found on page 3 of the Coach's Manual.

$-\dfrac{2}{3}$ ___ 1. $6x+15=11,\ 6x={}^-4,\ x=\dfrac{{}^-4}{6}=\dfrac{{}^-2}{3}$

___18.75%___ 2. $4\times12=48$ roses total, $\dfrac{9}{48}\times100=18.75\%$

or $18\dfrac{3}{4}\%$

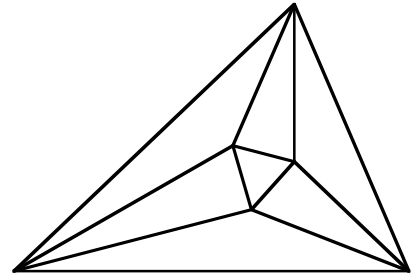___22.5___ 3. $\dfrac{15}{100}=\dfrac{x}{150},\ x=\dfrac{15\times150}{100}=22.5$ or $0.15\times150{=}22.5$

___35 feet___ 4. $2l+2(15)=100,\ 2l+30=100,\ 2l=70,\ l=35$

___154 miles___ 5. $\dfrac{55\text{ mi}}{1\text{ hr}}\times0.75\text{ hr}=41.25\text{ mi},\ \dfrac{75\text{ mi}}{1\text{ hr}}\times1.5\text{ hr}=112.5\text{ mi},\ 41.25{+}112.5{=}153.75$

Meet 3 - Event B   2006-2007

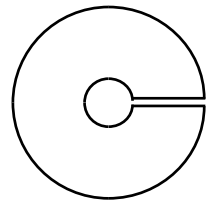Questions are worth 2-2-2-4-4 points respectively.
<u>Remember your units.</u>

_____1. Solve for x: $4(3-2x) = x-6$.

_____2. If the scale on a map is 2 inches = 5 miles, what does 2.5 inches on the map represent?

_____3. To drive the 217 miles to her aunt's house in 3 1/2 hours, how fast does Sharon have to drive?

_____4. Jenny made a circular Christmas tree skirt with a circular center cut out. Binding was needed to go on all the edges. If the outer diameter was 48 inches and the center diameter was 6 inches, how much binding was needed, to the nearest inch?

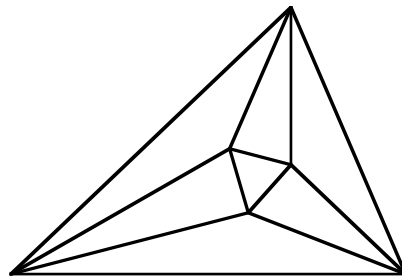_____5. Find the smallest value of x if x and y are integers and $x, y > 0$:

$$2\frac{1}{4} \div \frac{x}{y} + \frac{3}{4} = \frac{17}{20}.$$

Name_____School_____

Meet 3 - Event B   2006-2007 Answers

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

Graders are reminded to check the rules regarding partial credit for missing units found on page 3 of the Coach's Manual.

_____2_____ 1. $12 - 8x = x - 6,\ 12 = 9x - 6,\ 18 = 9x,\ x = 2$

__6.25 miles__ 2. $\dfrac{2 \text{ in}}{5 \text{ mi}} = \dfrac{2.5 \text{ in}}{x \text{ mi}},\ \ x = \dfrac{5 \times 2.5}{2} = 6.25$
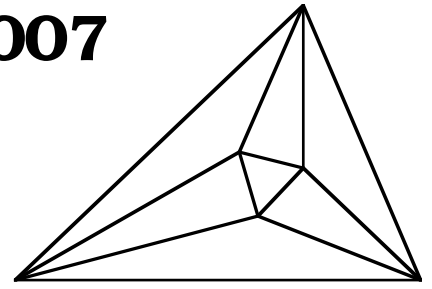
or $6\dfrac{1}{4}$ miles

___62 mph___ 3. $\dfrac{217 \text{ miles}}{3.5 \text{ hours}} = 62$ miles/hour

__212 inches__ 4. $48\pi = 150.8,\ 6\pi = 18.8,\ 48 - 6 = 42,\ 150.8 + 18.8 + 42.0 = 211.6$ inches

_____45_____ 5. $\dfrac{9}{4} \div \dfrac{x}{y} + \dfrac{3}{4} = \dfrac{17}{20},\ \ \dfrac{9}{4} \times \dfrac{y}{x} = \dfrac{17}{20} - \dfrac{15}{20} = \dfrac{2}{20} = \dfrac{1}{10}$

$\dfrac{y}{x} = \dfrac{1}{\cancel{10}^{\,}_{5}} \times \dfrac{\cancel{4}^{2}}{9} = \dfrac{2}{45},\ \ \ x = 45$

Meet 3 - Team Event   2006-2007

Questions are worth 4 points each.
<u>Remember your units.</u>

_____1. If a number is equal to 9 times the square of the sum of its digits, what is the number?

_____2. In the 750 piece jigsaw puzzle, there was a yellow covered bridge with a blue roof. There were 32 pieces with yellow on them, and 24 pieces with blue roof on them. Then I noted that 13 of those pieces had both yellow and blue on them. How many puzzle pieces were used to make the covered bridge?

_____3. The quilt was a rectangle, 36" by 46". Sonia wanted to add a 2" wide border to make the quilt measure 40" by 50". The fabric was only 43" wide. What length of fabric, to the nearest 1/8 of a yard, does she need to buy? Add 1/4" to each edge of the border for seams.
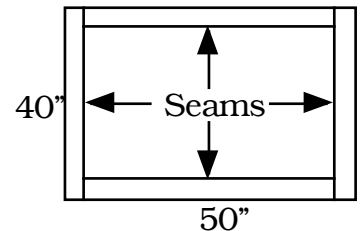
_____4. Solve for x as a quotient of relatively prime numbers:
$$x - 3(x + 2(x - 1)) = 5(x - (x + 4))$$

_____5. The perimeter of this semicircular shape is 30.85 cm. What is the diameter of the circle?
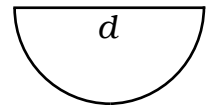
_____6. Solve for x as a decimal to the nearest tenth: $3(1.8 - x) - 4.5 = 3.2(x - 2.5)$.

_____7. In Yourtown of 2590 families, 54% of the families pay the full amount on their credit card statement each month. How many families do not pay the full amount each month?

_____8. The train from Ventura to Oxnard travels an average of 60 mph for the 40 miles between the cities. By road, the trip is 48 miles. If Sheila just missed the train in Ventura, what would her average speed have to be to arrive in Oxnard 2 minutes before the train arrives?

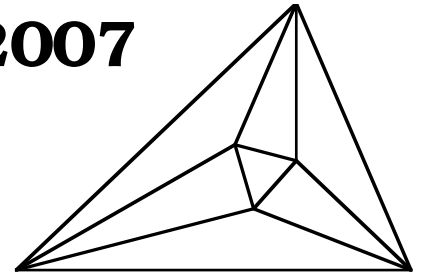_____9. A purse costs $36 plus 7% sales tax. What will you pay for the purse?

_____10. Negative five-thirds is three-halves of what number, as a quotient of relatively prime numbers?

School_____

Meet 3 - Team Event   2006-2007
Answers

Questions are worth 4 points each.
<u>Remember your units.</u>

2916 1. $N = 9d^2$, but d is divisible by 9, so $N = 9(9t)^2 = 729t^2$.

For $t=1$: $729 = 9(7+2+9)^2 = 2916$ which is false.

For $t=2$, $729(2)^2 = 2916 = 9(2+9+1+6)^2 = 2916$ is true. So $N=2916$.

43 2. Only yellow=39-13(with both)=19. Only blue=24-13=11,
Bridge=19+11+13=43 pieces

$1\frac{3}{8}$ yds 3. 46" for the long side is longer that the 43" wide material, so the yards bought must be 46"+1/4"+1/4" =46.5" long. 46.5/36=1.29 yds, so buy 1 3/8 yds=1.375 yds.

$\dfrac{13}{4}$ 4. $x - 3(x + 2x - 2) = 5(x - x - 4),\quad x - 3(3x - 2) = 5(^-4),\quad x - 9x + 6 = {}^-20$
$-8x = {}^-26,\quad x = 26/8 = 13/4$

12 cm 5. $\dfrac{\pi d}{2} + d = 30.85,\quad d\left(\dfrac{\pi}{2} + 1\right) = 30.85,\quad d = \dfrac{30.85}{2.57} = 12$

1.4 6. $5.4 - 3x - 4.5 = 3.2x - 8,\quad 0.9 - 3x = 3.2x - 8,\quad 8.9 = 6.2x,\quad x = 1.43$

1191 7. $100 - 54 = 46\%,\quad 0.46(2590) = 1191.4$

76 mph 8. $\dfrac{40}{60} = \dfrac{2}{3}$ hr = 40 min, $48 \div \dfrac{38}{60} = 75.789$

$38.52 9. $36(1.07) = 38.52$

$-\dfrac{10}{9}$ 10. $-\dfrac{5}{3} = \dfrac{3}{2}x,\quad x = -\dfrac{5}{3} \cdot \dfrac{2}{3} = -\dfrac{10}{9}$