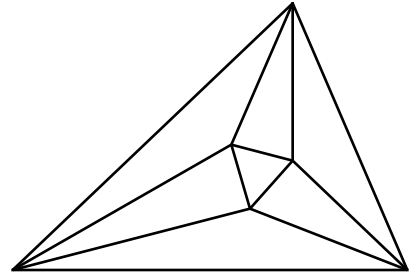


Meet 3 - Event A 2001-2002

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

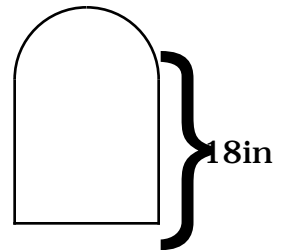


_____ 1. Solve for x : $\frac{-3}{5} = \frac{x}{15}$

_____ 2. Justin's class started out with 12 students on September 5th and grew to 30 students on October 1st. What percent of the September 5th class is the October 1st class?

_____ 3. Ken drove the 165 miles up to the cabin in 2 hours and 45 minutes. What was his average speed?

_____ 4. The window was a square with half a circle on top. One side of the square was 18 inches. Find the perimeter of the window, to the nearest hundredth.



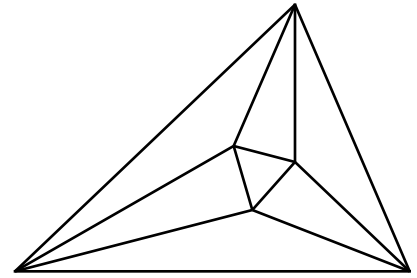
_____ 5. Each flower has a specific price. One tulip, one daisy, and 2 mums cost \$4.20. One tulip, two daisies and one mum cost \$3.80. Two tulips and 2 mums cost \$4.80. How much does one tulip, three daisies and 2 mums cost?

Name _____ School _____

Meet 3 - Event A 2001-2002

Answers

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



-9 1. $5x = -45 \quad x = \frac{-45}{5} = -9$

250% 2. $\frac{30}{12} \times 100 = 250\%$

60mph 3. 2 hours 45 minutes = 2.75 hours $\frac{165 \text{ miles}}{2.75 \text{ hours}} = 60 \text{ mph}$

82.27in 4. The circle diameter is 18 inches, so $\frac{1}{2} \cdot \pi \cdot 18 = 28.27 \text{ in.}$, is the curved part.
 $18 + 18 + 18 + 28.27 = 82.27 \text{ in.}$

Eq. 1: $T + D + 2M = \$4.20$

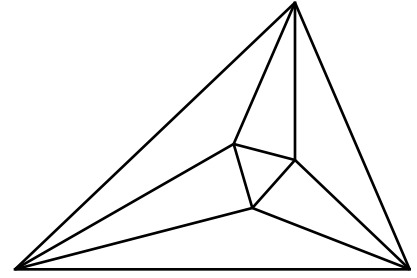
\$5.60 5. Eq. 2: $T + 2D + M = \$3.80$

Eq. 3: $2T + 2M = \$4.80$ so Eq. 4: $T + M = 2.40$

Considering Eq. 2 and Eq. 4, $2D = 3.80 - 2.40 = 1.40$ so $D = 0.70$. Using this, Eq. 1 becomes Eq. 5: $T + 2M = 4.20 - 0.70 = 3.50$. Consider Eq. 3 and Eq. 5 to conclude $T = 4.80 - 3.50 = 1.30$. Consider Eq. 4 and Eq. 5 to conclude $M = 3.50 - 2.40 = 1.10$. So $1.30 + 3(0.70) + 2(1.10) = \5.60 .

Meet 3 - Event B 2001-2002

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



_____ 1. Solve for x : $4 = 48 - 11x$.

_____ 2. What is the number of factors in 2520?

_____ 3. The moon rise and set times on a 24-hour clock for each date is in this table:

Date	April	
	Rise	Set
	h m	h m
11	23:18	07:50
12		08:27
13	00:20	09:10

How long was the moon above the horizon on April 13th?

_____ 4. How long was the moon above the horizon the time just before April 13th?

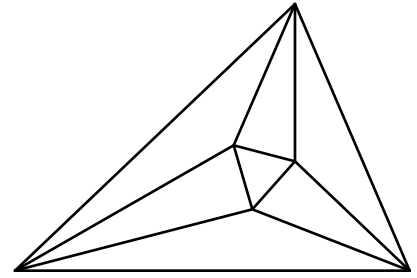
_____ 5. Jeff, Joe, and Julie started walking together around a circular, 200 meter long track. Jeff walked at a speed of 3 km/hour, Joe at 4 km/hour, and Julie at 5 km/hour. How long did it take for all three of them to cross the starting line together?

Name _____ School _____

Meet 3 - Event B 2001-2002

Answers

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



4 1. $4 = 48 - 11x$
 $11x = 48 - 4 = 44$
 $x = 4$

48 2. $2520 = 2^3 \cdot 3^2 \cdot 5 \cdot 7$
 $(3 + 1)(2 + 1)(1 + 1)(1 = 1) = 48$

8:50 3. $09:10-00:20=08:70-00:20=8:50$
or 8 hours 50 minutes

9:09 4. The moon rose just before midnight on April 11th and set in the morning
or 9hr 9 min April 12th. $23:18$ is 42 minutes before midnight, so $:42+8:27=8:69=9:09$

0.2 hr or 12min 5. At the end, the times will be the same, but the number of times
around the track are different: Jeff is x , Joe is y , and Julie is z .

$$\frac{x}{3} = \frac{y}{4} = \frac{z}{5}$$

$$4x = 3y \quad 4z = 5y \quad 3z = 5x$$

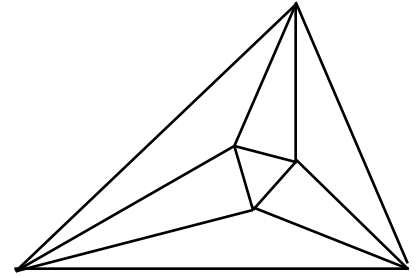
$$\text{so } x = \frac{3}{4}y = \frac{3}{5}z$$

The smallest values for x , y , and z are $x=3$, $y=4$, and $z=5$.

For Jeff, $\frac{3 \times 0.2\text{km}}{3\text{km / hr}} = 0.2\text{h} = 12\text{min}$

Meet 3 - Event C 2001-2002

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

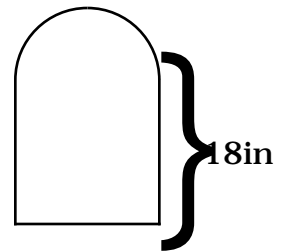


_____ 1. Solve for x : $\frac{3a}{5b} = \frac{x}{15b}$.

_____ 2. Solve for x as an improper fraction: $20 - 3(12 - x) = 4(8 - x)$.

_____ 3. If the perimeter of a square is increased by 1 foot, by how much is the side increased?

_____ 4. The window was a square with half a circle on top. One side of the square was 18 inches. Find the perimeter of the window, to the nearest hundredth.



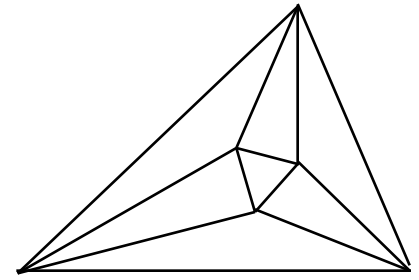
_____ 5. Each flower has a specific price. One tulip, one daisy, and 2 mums cost \$4.20. On tulip, two daisies and one mum cost \$3.80. Two tulips and 2 mums cost \$4.80. How much does one tulip, three daisies and 2 mums cost?

Name _____ School _____

Meet 3 - Event C 2001-2002

Answers

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



9a 1. $x = \frac{3a \times 15b}{5b} = 9a$

$\frac{48}{7}$ 2. $20 - 36 + 3x = 32 - 4x$
 $-16 + 3x = 32 - 4x$
 $3x + 4x = 32 + 16$
 $7x = 48$

$\frac{1}{4}$ foot 3. Originally $P = 4x$, $P + 1 = 4(x + y) = 4x + 4y$
or 3 inches $4x + 1 = 4x + 4y$, $1 = 4y$, $y = \frac{1}{4}$ foot or 3 inches

OR An increase of 1 will come equally from all four sides, so $1 \div 4 = \frac{1}{4}$

82.27in 4. The circle diameter is 18 inches, so $\frac{1}{2} \cdot \pi \cdot 18 = 28.27$ in., is the curved part.
 $18 + 18 + 18 + 28.27 = 82.27$ in.

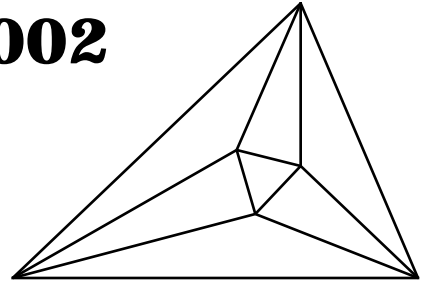
\$5.60 5. See Event A problem 5 or use matrices:

$$\begin{array}{l} T + D + 2M = \$4.20 \\ T + 2D + M = \$3.80 \\ 2T + 2M = \$4.80 \end{array} \quad \begin{bmatrix} 1 & 1 & 2 \\ 1 & 2 & 1 \\ 2 & 0 & 2 \end{bmatrix}^{-1} \begin{bmatrix} 4.2 \\ 3.8 \\ 4.8 \end{bmatrix} = \begin{bmatrix} 1.3 \\ 0.7 \\ 1.1 \end{bmatrix}$$

Therefore: tulips cost \$1.30, daisies cost \$0.70, and mums cost \$1.10 each.

Meet 3 - Team Event 2001-2002

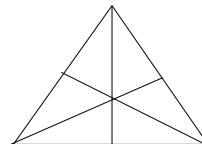
Questions are worth 4 points each.
Remember your units.



- _____ 1. What is the first time after 7 PM that the minute hand will overtake the hour hand, to the nearest second?
- _____ 2. A circular plastic wading pool contains 100 gallons of water when it is 18 inches deep. On a hot day, children splashing reduces the depth of water to 13 inches. To the nearest whole number, how much water is in the pool when the depth is 13 inches.
- _____ 3. If Vang biked the 1 mile from home to school at 12 mph and Yia raced him and got to school 1 minute after Vang, what was Yia's average speed?
- _____ 4. At the store, Brand A corn flakes are \$2.35 for 12 oz., Brand B corn flakes are \$4.20 for 21 oz., and Brand C are \$1.98 for 10 oz. Which is the better buy?

_____ 5. Solve for c : $\frac{a}{b} = \frac{c}{d}$.

- _____ 6. How many triangles are in this figure?



- _____ 7. What percent of 4 is 16?
- _____ 8. Doctors say that 1 in 14 children have asthma. What percent of your school is predicted by the doctors to have asthma, to the nearest tenth?
- _____ 9. A paper circle of circumference 23.56 cm. is cut into quarters. What is the perimeter of one quarter?
- _____ 10. Marsha averaged 60 mph driving from home to the cabin, and her husband, Steven, averaged 55 mph. Marsha arrived 10 minutes before Steven. What is the distance from their home to the cabin if they both drove the same route?

School _____

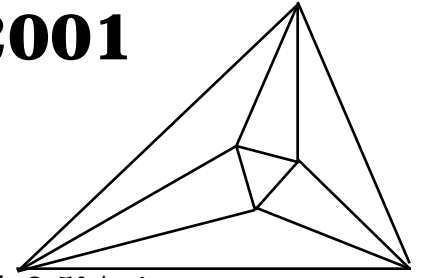
Meet 3 - Team Event

2000-2001

Answers

Questions are worth 4 points each.

Remember your units.



- 7:38:11 1. Rate of minute hand = $6^\circ/\text{min}$. Rate of hour hand = $0.5^\circ/\text{min}$
The time is the same, distance and rate are different
Minute hand Hour hand
$$\frac{x^\circ}{6^\circ/\text{min}} = \frac{x^\circ - 210}{0.5^\circ/\text{min}} \quad 0.5x = 6x - 1260, 5.5x = 1260, x = 229.\overline{09}$$

Time = $229.\overline{09} / 6 = 38.\overline{18}$ minutes = 38 minutes 11 seconds
- 72 gal. 2. $\frac{18}{100} = \frac{13}{x} \quad x = \frac{13 \times 100}{18} = 72.\overline{2}$
- 10mph 3. $\frac{1\text{mi}}{12\text{mi/hr}} = \frac{1}{12}\text{hr} \times 60 = 5\text{min}, 5 + 1 = 6\text{min} = \frac{6}{60} = 0.1\text{hr}, \frac{1\text{mi}}{0.1\text{hr}} = 10\text{mph}$
or $1/6$ mi/min
- A 4. A: $\frac{2.35}{12} = 0.1958$ B: $\frac{4.20}{21} = 0.20$ C: $\frac{1.98}{10} = 0.198$
Brand A has the lowest unit price.
- $\frac{ad}{b}$ 5. $bc = ad \quad c = \frac{ad}{b}$
- 16 6. 1 equilateral + 6 large right + 6 small right + 3 isosceles
- 400% 7. $\frac{16}{4} \times 100 = 400$
- 7.1% 8. $\frac{1}{14} \times 100 = 7.142857$
- 13.39cm 9. $23.56 = \pi d$ so $d = 7.499$ for straight edge, $\frac{1}{4}(23.56) = 5.89$ for the curve
 $7.499 + 5.89 = 13.389$
- 110miles 10. The distance is the same, so let t = hours Marsha drove.
 $60t = 55\left(t + \frac{1}{6}\right) \quad 60t = 55t + \frac{55}{6} \quad 5t = \frac{55}{6} \quad t = \frac{11}{6} \quad d = 60 \cdot \frac{11}{6} = 110$