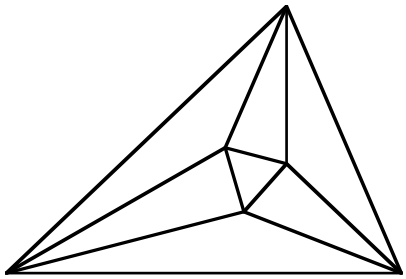
Meet 1 - Event A 2011-2012



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

NO CALCULATORS ALLOWED

_____m 1. How many meters is half a millimeter?

_____2. Write as the ratio of relatively prime numbers: $\frac{330}{495}$,

_____3. Write as the ratio of relatively prime numbers: $\frac{2}{3}+\frac{5}{12}\div\frac{3}{4}=?$

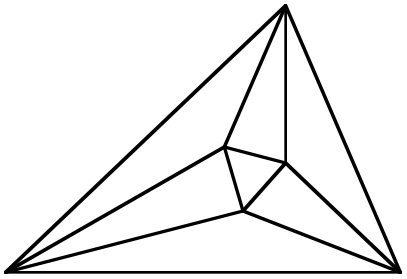
_____4. If a number is divisible by 12, it must also be divisible by what other integers, other than 1 and itself?

_____5. Find the sum of $a+b+c$:

$$\frac{42}{13}=a+\frac{1}{b+\frac{1}{c}}$$

Name_____School_____

Meet 1 - Event A 2011-2012 Answers



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

0.0005m 1. $0.5\text{mm} = 0.05\text{cm} = 0.0005\text{m}$

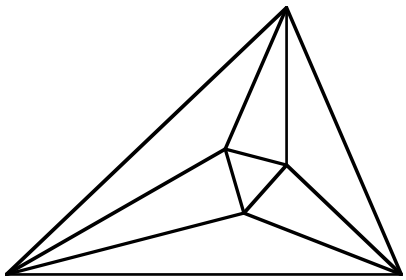
$\frac{2}{3}$ 2. $\frac{330}{495} = \frac{2 \bullet 3 \bullet 5 \bullet 11}{3 \bullet 3 \bullet 5 \bullet 11} = \frac{2}{3}$

$\frac{11}{9}$ 3. $\frac{2}{3} + \frac{5}{\cancel{12}_{3}} \times \frac{\cancel{4}^{1}}{3} = \frac{2}{3} + \frac{5}{9} = \frac{6}{9} + \frac{5}{9} = \frac{11}{9}$

2, 3, 4, 6 4. Factors of 12 are 2, 3, 4, 6
(must have all four factors)

10 5. $\frac{42}{13} = 3 + \frac{3}{13} = 3 + \frac{1}{\frac{13}{3}} = 3 + \frac{1}{4 + \frac{1}{3}}, \quad 3 + 4 + 3 = 10$

Meet 1 - Event B 2011-2012



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

NO CALCULATORS ALLOWED

_____1. Write the algebraic expression for a number, n, increased by the quotient of thirty-six and the number.

_____2. Write the algebraic equation for five times the sum of a number, n, and three is the product of two more than the number and four less than the number.

_____3. Simplify: $\frac{^{-}9+5}{3-4-^{-}5}$.

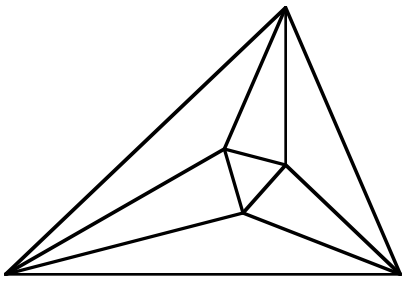
_____4. Which integers between 50 and 60 are prime?

_____5. What is the obtuse angle formed between the hands of a clock at 10:10?

Name_____School_____

Meet 1 - Event B 2011-2012

Answers



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

$n+\frac{36}{n}$ 1. $n+\frac{36}{n}$

$5(n+3)=(n+2)(n-4)$ 2. $5(n+3)=(n+2)(n-4)$

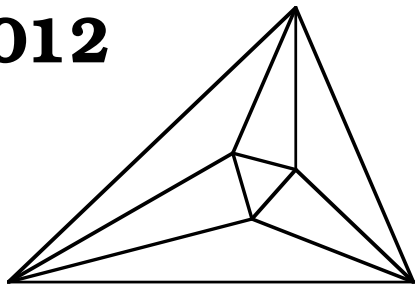
or $5(n+3)=(2+n)(n-4)$

$^{-}1$ 3. $\frac{^{-}9+5}{3-4-^{-}5}=\frac{^{-}4}{3-4+^{+}5}=\frac{^{-}4}{^{-}1+5}=\frac{^{-}4}{4}=^{-}1$

53, 59 4. No prime numbers are even. $51=3\bullet 17$, 53, $55=5\bullet 11$, $57=3\bullet 19$, 59

$115°$ 5. There are 30° between each number, so the minute hand is 60° past the 12.
$\frac{10}{60}\times 30°=5°$, so the hour hand is $30°-5°=25°$ before the 11, or
$30°+25°=55°$ before the 12. $60°+55°=115°$.

Meet 1 - Team Event 2011-2012



Questions are worth 4 points each.
Remember your units.

NO CALCULATORS ALLOWED

_____1. Find the GCF of 60 and 882.

_____2. Find the LCM of 60 and 882.

_____3. $\frac{2}{3}-\frac{1}{3}\bullet\frac{4}{5}\div\frac{4}{9}+\frac{1}{2}=?$

_____4. If one quart, one pint, and one cup of water are poured from one gallon, how much is left?

_____5. What is the acute angle between clock hands at 3:16?

_____6. Factor 456 into primes of the appropriate power.

_____7. Martha's quilt needed 75 squares of green material. Each square was 6 inches on a side. If a bolt of fabric is 44 inches wide, what length of fabric is needed, rounding up to the nearest 1/4 of a yard?

_____8. If *b* represents a non-zero digit, what are guaranteed to be factors of *bbb*, other than 1 and *bbb*?

_____9. If *b* represents a prime factor, what are all the numerical factors of *bbb*?

_____10. Divide 129 into 6063.

 School_____

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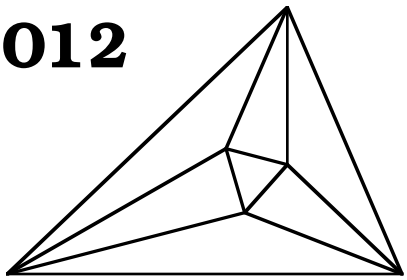
Answers



Questions are worth 4 points each.
Remember your units.

6 1. $60 = 2^2 \bullet 3 \bullet 5, \quad 882 = 2 \bullet 3^2 \bullet 7^2, \quad \text{GCF} = 2 \bullet 3 = 6$

8820 2. $\text{LCM} = 2^2 \bullet 3^2 \bullet 5 \bullet 7^2 = 2 \bullet 5 \bullet \left(2 \bullet 3^2 \bullet 7^2\right) = 10(882) = 8820$

$\frac{17}{30}$ 3. $\frac{2}{3} - \left(\frac{1}{\cancel{3}} \bullet \frac{\cancel{4}}{5} \bullet \frac{\cancel{9}^{3}}{\cancel{4}}\right) + \frac{1}{2} = \frac{2}{3} - \frac{3}{5} + \frac{1}{2} = \frac{20}{30} - \frac{18}{30} + \frac{15}{30} = \frac{17}{30}$

2 qt 1 cup 4. 3qt+1pt+2c-1qt-1pt-1c=2 qt 1 cup

$2°$ 5. The hour hand is $\frac{16}{60} \times 30° = 8°$ past the three. The minute hand is $\frac{1}{5} \times 30° = 6°$ past the three. $8° - 6° = 2°$

$2^3 \bullet 3 \bullet 19$ 6.

2 yards 7. $44 \div 6 = 7$ squares in each row. $75 \div 7 = 10\ 5/7 = 11$ rows needed. $11 \bullet 6$ inches=66 inches of length. $(1/4) \bullet 36 = 9$ inches in a quarter yard $66 \div 9 = 7\ 1/3 = 8$ quarters = 2 yards

3, 37, 111 8. $bbb = b(111)$, so 111 is a factor. $b + b + b = 3b$, so 3 is a factor. $111 = 3 \bullet 37$

$1, b, b^2, b^3$ 9. $bbb = b \bullet b \bullet b = b^3$

47 10.
$$\begin{array}{r} 47 \\ 129\overline{)6063} \\ \underline{516} \\ 903 \\ \underline{903} \end{array}$$