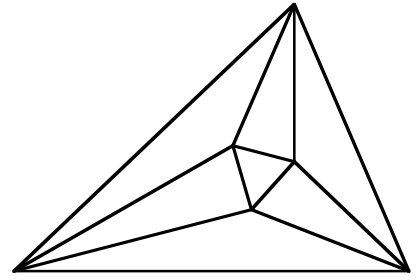


# Meet 2 - Event A 2006-2007

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

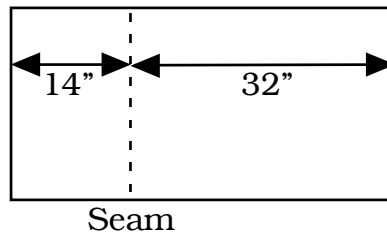


\_\_\_\_\_ 1.  $|-2| - |-8 + 3| = ?$

\_\_\_\_\_ 2. Write the algebraic expression for: the amount, A, is equal to one thousand times the quantity one and five hundredths raised to the thirty-sixth power.

\_\_\_\_\_ 3. Write as a decimal:  $5.42 \times 10^{-4}$ .

\_\_\_\_\_ 4. The rectangular piece of fabric had a seam in it. The left edge of the fabric was 14" to the left of the seam. The right edge of the fabric was 32" to the right of the seam. How far to the right of the seam was the midpoint of the fabric?

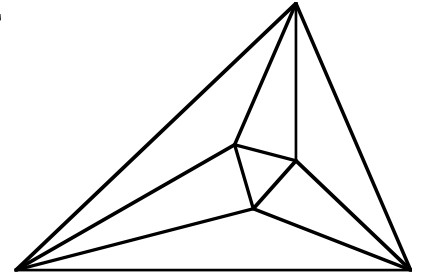


\_\_\_\_\_ 5. Write 42 as a quotient of two factorials **NOT** using 42!.

# Meet 2 - Event A 2006-2007

## Answers

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



-3 1.  $2 - |-5| = 2 - 5 = -3$

$1000(1.05)^{36}$  2.  $A = 1000(1 + 0.05)^{36}$

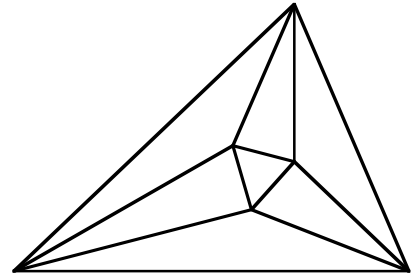
0.000542 3.

9" 4.  $14 + 32 = 46$ ,  $\frac{46}{2} = 23$ , so  $32 - 23 = 9$

$\frac{7!}{5!}$  5.  $42 = 6 \cdot 7$ ,  $\frac{7!}{5!} = \frac{1 \cdot 2 \cdot 3 \cdot 4 \cdot 5 \cdot 6 \cdot 7}{1 \cdot 2 \cdot 3 \cdot 4 \cdot 5}$

# Meet 2 - Event B 2006-2007

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



\_\_\_\_\_1. What is the first missing value: 10, ?,    , 31,    , 45?

\_\_\_\_\_2. What is the coordinate of the point  $\frac{1}{4}$  of the way from  $-12$  to  $12$ ?

\_\_\_\_\_3. Write as a quotient of relatively prime numbers without exponents:  
 $2^{-3} \cdot 3^2 \cdot 5^{-1}$ .

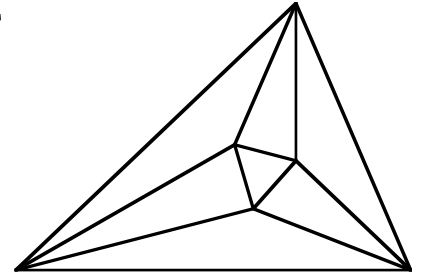
\_\_\_\_\_4. What is the coordinate of the point  $\frac{1}{3}$  of the way from  $-12$  to  $12$ ?

\_\_\_\_\_5. Find all possible values of  $x$  if:  $|3x - 5| = 7$ .

# Meet 2 - Event B 2006-2007

## Answers

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



17 1.  $45 - 31 = 14$  and  $\frac{14}{2} = 7$ , so add 7 to each value: 10, 17, 24, 31, 38, 45

-6 2. The midpoint of -12 to 12 is 0. The midpoint of -12 to 0 is -6.

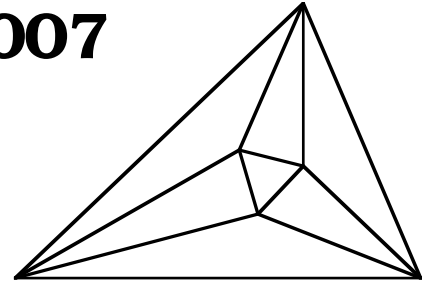
$\frac{9}{40}$  3.  $2^{-3} \cdot 3^2 \cdot 5^{-1} = \frac{3^2}{2^3 \cdot 5} = \frac{9}{8 \cdot 5} = \frac{9}{40}$

-4 4.  $12 - ^{-}12 = 24$  total distance.  $\frac{1}{3} \times 24 = 8$  is  $\frac{1}{3}$  of the way.  $^{-}12 + 8 = ^{-}4$

$-\frac{2}{3}, 4$  5.  $3x - 5 = 7, 3x = 12, x = 4$   
 $3x - 5 = ^{-}7, 3x = ^{-}2, x = -\frac{2}{3}$

# Meet 2 - Team Event 2006-2007

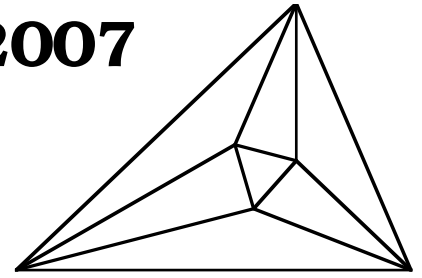
Questions are worth 4 points each.  
Remember your units.



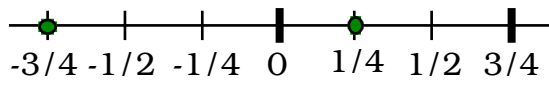
- \_\_\_\_\_ 1. If a number equals nine times the square of sum of its digits,  $N=9d^2$ , what is the largest number guaranteed to be a divisor of  $N$ ?
- \_\_\_\_\_ 2. Which two numbers are twice as far from  $3/4$  as from 0?
- \_\_\_\_\_ 3. Given  $x$  and  $y$  are integers. If  $x$  can be from 8 to 16, and  $x/y$  can be from 2 to 8, what is the largest possible value for  $y$ ?
- \_\_\_\_\_ 4. What is the eighth term in this sequence?  $27/2, 9, 6, 4, \_, \_, \_, \_?$
- \_\_\_\_\_ 5. What is the coordinate of the point  $1/3$  of the way from  $-1.2$  to  $41.7$ ?
- \_\_\_\_\_ 6. Write the algebraic expression for  $x$  is 4 units from  $-3$ .
- \_\_\_\_\_ 7. Solve for  $x$  if  $2^6 = 8^x$ .
- \_\_\_\_\_ 8. Solve for  $x$  if  $4^4 = 8^x$ .
- \_\_\_\_\_ 9. What is the next term in this sequence?  $80, 63, 48, 35, \_?$
- \_\_\_\_\_ 10. Simplify:  $x^{-3}y^4x^4y^{-1} = ?$ .

## Answers

Questions are worth 4 points each.  
Remember your units.



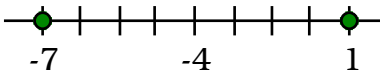
729 1. Since  $N$  is a multiple of 9, the sum of its digits is also, so  $N = 9(9t)^2$  or  $N = 729t^2$  and 729 is the largest guaranteed divisor.  $729 = 9(7 + 2 + 9)^2 = 2916$  if false. For  $t=2$ ,  $729(2)^2 = 2916 = 9(2 + 9 + 1 + 6)^2 = 2916$  is true. So  $N=2916$ .

$-\frac{3}{4}, \frac{1}{4}$  2.  $\frac{1}{3} \times \frac{3}{4} = \frac{1}{4}$  so divide into fourths 

8 3. Consider the extremes:  
 $x = 8 : \frac{8}{y} = 2, y = 4, \frac{8}{y} = 8, y = 1$   
 $x = 16 : \frac{16}{y} = 2, y = 8, \frac{16}{y} = 8, y = 2$

$\frac{64}{81}$  4.  $\frac{27}{2} = 3^3 \cdot 2^{-1}, 3^2 \cdot 2^0, 3^1 \cdot 2^1, 3^0 \cdot 2^2, \underline{3^{-1} \cdot 2^3}, \underline{3^{-2} \cdot 2^4}, \underline{3^{-3} \cdot 2^5}, \underline{3^{-4} \cdot 2^6} = \frac{64}{81}$

13.1 5.  $41.7 - ^{-}1.2 = 42.9, 42.9 \times \frac{1}{3} = 14.3, ^{-}1.2 + 14.3 = 13.1$

$|x+3|=4$  6.  $|x - ^{-}3|=4$  so  $|x+3|=4$  

2 7.  $2^6 = (2^3)^x = 2^{3x}$  so  $6 = 3x, x = 2$

$\frac{8}{3}$  or  $2\frac{2}{3}$  8.  $(2^2)^4 = (2^3)^x$  so  $2^8 = 2^{3x}, 8 = 3x, x = \frac{8}{3}$

24 9.  $80 = 9^2 - 1, 63 = 8^2 - 1, 48 = 7^2 - 1, 35 = 6^2 - 1$ , so  $5^2 - 1 = 24$

$xy^3$  10.  $x^{-3}y^4x^4y^{-1} = \frac{y^4x^4}{y^1x^3} = y^3x^1$