Math 10 – Unit 6 – 9.1 to 9.3; 10.1 to 10.5
To the Test – be sure to bring:

(1) your personally-prepared 8 ½ " by 11" study guide for this test
(2) your simple, non-graphing calculator and
(3) your pencils
(4) your BluGold ID

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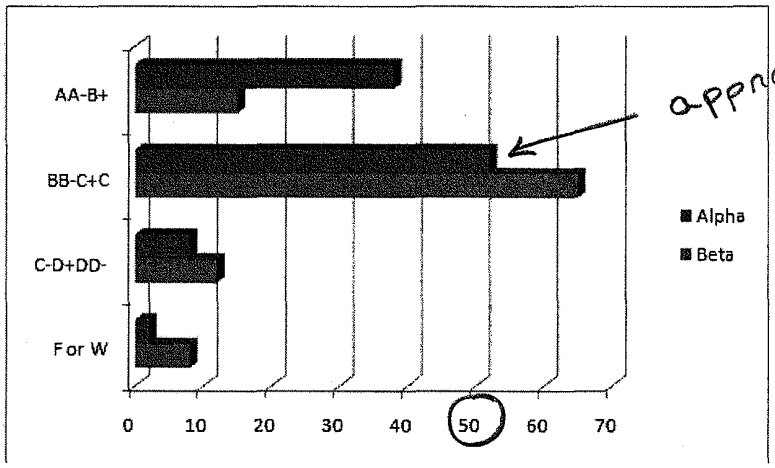
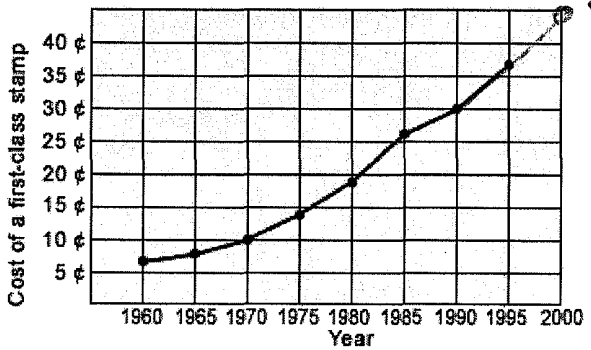
1. According to the chart, approximately what percent of the Alpha team (the top bar in each set) received a grade of BB-C+C? (Round your answer to the nearest 5%.)



approximately 50%

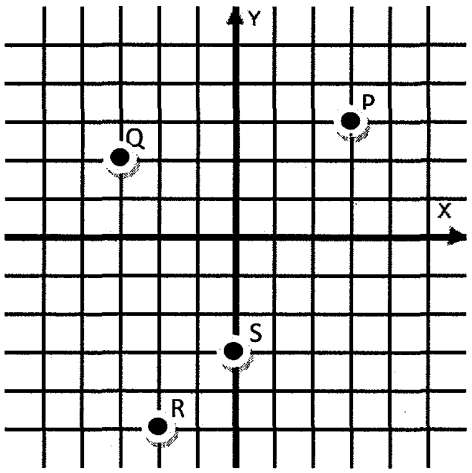
2. Using the following line graph and the table, is the following statement TRUE or FALSE.
We could "predict" that the cost of a first-class stamp on January 1, 2000 would be 50 cents.

1,965	8
1,970	10
1,975	14
1,980	19
1,985	26
1,990	30
1,995	37
2,000	?



Look at the scale on the left this would be about 45 ¢

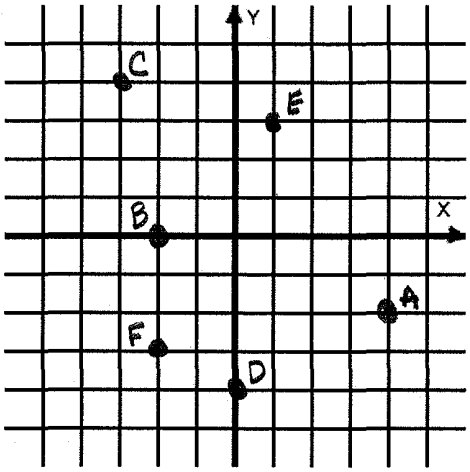
3. Give the coordinates of points P, Q, R, and S.



P (3, 3)
Q (−3, 2)
R (−2, −5)
S (0, −3)

(⟷ x , ↕ y)

4. Graph and label the points corresponding to A (4, -2), B (-2, 0), C (-3, 4), D (0, -4), E (1, 3), F (-2, -3)



5. Which of the following points are solutions for the equation: Complete the ordered pairs so that each is a solution for the equation: $6x - y = 5$.

(2, 7) (-3, -13) (-2, -17) (3, 13)

$6(2) - (7) = 5$
$12 - 7 = 5$
$5 = 5$
yes

$6(-3) - (13) = 5$
$-18 - 13 = 5$
$-31 = 5$
NO

$6(-2) - (-17) = 5$
$-12 + 17 = 5$
$5 = 5$
yes

$6(3) - 13 = 5$
$18 - 13 = 5$
$5 = 5$
yes

6. Consider the line $y = 6x - 5$

Complete the table of values that are solutions for the line.

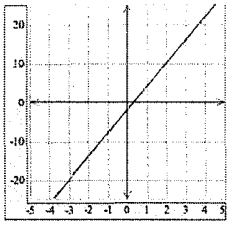
$y = 6(-1) - 5$
$y = -6 - 5$
$y = -11$

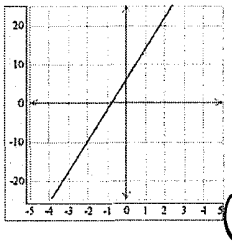
$y = 6(0) - 5$
$y = 0 - 5$
$y = -5$

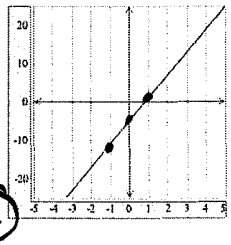
$y = 6(1) - 5$
$y = 6 - 5$
$y = 1$

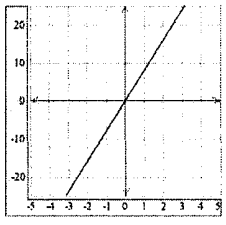
X	Y
-1	-11
0	-5
1	1

Which of the following is a graph of the line $y = 6x - 5$?

A. 

B. 

C. 

D. 

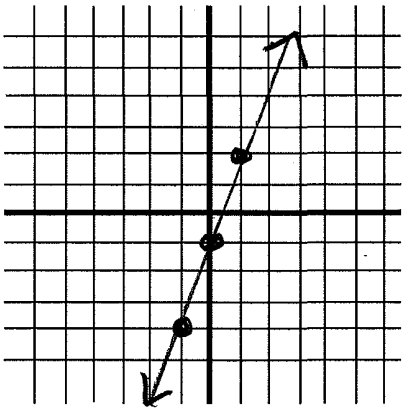
C.

7. Graph the line: $y = 3x - 1$ Plot <u>at least two</u> solution points, then graph the line.

I usually start with -1, 0, and 1 you can use anythins.

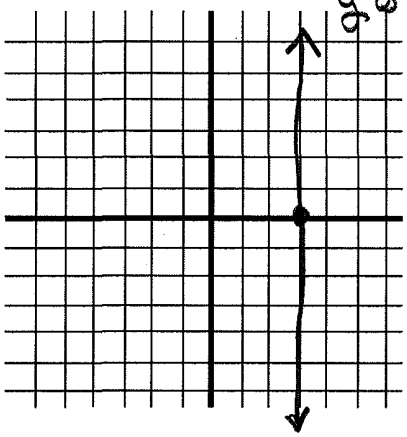
$y = 3(1) - 1$
$y = 3 - 1$
$y = 2$
$(1, 2)$

$y = 3(0) - 1$
$y = 0 - 1$
$y = -1$
$(0, -1)$

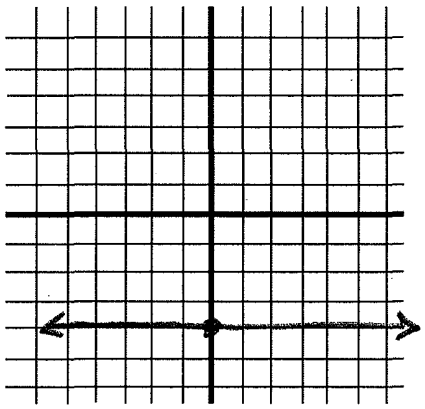


$y = 3(-1) - 1$
$y = -3 - 1$
$y = -4$
$(-1, -4)$

Graph the lines: $x = 3$ doesn't matter what y is, $x = 3$



$y = -4$ doesn't matter what x is, $y = -4$



8. Simplify the expression: $5x^2 \bullet 4x^4$

multiply coefficients
add exponents

$20x^6$

9. Simplify the expressions: $(3x^6)^4$

power to a power multiply exp.

$3^4 x^{24}$

$3 \cdot 3 \cdot 3 \cdot 3$

$9 \cdot 9$

$= 81x^{24}$

$\frac{x^7}{x^3}$ when dividing subtract exp.

$x^{7-3} = x^4$

10. Find the value of $3x^2 - 4x + 5$ when $x = 2$

$3(2)^2 - 4(2) + 5$

$3 \cdot 4 - 8 + 5$

$12 - 8 + 5$

$4 + 5 = 9$

$k(x) = 4x^2 - 2x + 6$ What is k(5) ?

$4(5)^2 - 2(5) + 6$

$4 \cdot 25 - 10 + 6$

$100 - 10 + 6$

$90 + 6$

96

11. Perform the indicated operations.

$(3x^2 - 6x + 9) + (2x^2 - 5x - 1)$

$5x^2 - 11x + 8$

$(5x^2 - 6x - 8) + (3x^2 - 9x + 15)$

$8x^2 - 15x + 7$

$(7x^3 - 6x^2 - 9x) - (10x^2 + 3x + 12)$

$7x^3 - 6x^2 - 9x - 10x^2 - 3x - 12$

$7x^3 - 16x^2 - 12x - 12$

12. Perform the indicated operations. $4x - (-6x + 8)$

$4x + 6x - 8$

$10x - 8$

13. Perform the indicated operations. Be careful. $(3x^2-4x+9)-(2x^2-5x-1)$

$3x^2-4x+9-2x^2+5x+1$

x^2+x+10

14. Multiply $(4x^2y^3)(-6x^2y^5)$

multiply coefficients
add exponents

$-24x^4y^8$

15. Multiply: $7g^7(3g^3+8g)$

$21g^{10}+56g^8$

Multiply: $7a^4-3a$ by $8a^3$

$56a^7-24a^4$

16. Multiply: $(3x-8)(7x+1)$

$21x^2+3x-56x-8$

$21x^2-53x-8$

17. Multiply: $3x(5x-7)(2x+6)$

$(15x^2-21x)(2x+6)$

$30x^3+90x^2-42x^2-126$

$30x^3+48x^2-126$

18. What is the Greatest Common Factor (GCF) of $15x^2$ and $10x$?

$15x^2: 3\cdot 5\cdot x\cdot x$

$10x: 5\cdot x\cdot 2$

GCF: $5\cdot x$

19. Factor **completely**: $15a^4-45a^3+30a^2$

GCF $= 15a^2$

$15a^2(a^2-3a+2)$ ← ok to leave after GCF is factored out.

$15a^2(a-2)(a-1)$ I don't expect you to factor more at this time. I just wanted to show we could (and will later) factor again.

20. Factor **completely**: $16x^7+48x^6+160x^5$

$16x^5(x^2+3x+10)$