**Part I – REVIEW A**

Answer all 13 questions in this part. Each correct answer will receive two credits. For each question, all work is to be shown with the corresponding answer written in the space provided. A correct answer with no work shown will receive one credit. [26]

1. Perform the indicated operation.

 $\left(5x^{2}+4x-9\right)+\left(3x^{2}+9x+4\right)-\left(6x^{2}-11\right)$

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Factor the trinomial completely.

 $6x^{2}-11x-35$

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Factor the trinomial completely.

 $y^{2}-7y-30$

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Find the root. *(Assume that all variables represent positive numbers)*.

 $\sqrt{36c^{2}d^{2}}$

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Express 0.000000000454 in scientific notation.

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Find the product

 $(8x-6z)(8x+6z)$

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Find the slope of a line given two points on the line.

 $\left(2, 4\right) and \left(-4, 6\right)$

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Solve the formula for the variable *f*.

 $M=\frac{2}{7}fg$

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Simplify the polynomials by combining any like terms.

 $9x^{2}y+4xy^{2}-3yx^{2}+2-7y^{2}x $

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Find the Greatest Common Factor (GCF) of the following terms:

 $270g^{3}, -45g^{6}, 60g^{9}$

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Simplify the expression $\frac{h-9}{9-h}$.

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write $3.84×10^{9}$ in Standard Form.

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Graph the equation, $y=2x-5$.



**Part II – REVIEW A**

Answer all 13 questions in this part. Each correct answer will receive three credits. For each question, all work is to be shown with the corresponding answer written in the space provided. A correct answer with no work shown will receive one credit. [39]

14. Solve the equation:

 $3x^{2}-26x-9=0$

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

15. Solve the equation:

 $5\left(2x-4\right)=-18+58$

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

16. Perform the indicated operation and simplify if possible.

 $\frac{a^{2}}{a-10}+\frac{3a-130}{a-10}$

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

17. A birthday celebration meal costs $64.25. Find the total paid if a 12% tip is added to the

 cost of the meal.

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

18. A car rental agency advertised renting a car for $29.95 per day, plus $0.30 per mile. If

 Trevor rents a car for 5 days, how many *whole* miles can he drive on a $275.00 budget?

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

19. Use the Quadratic Formula to solve the equation. Find the exact solutions and then

 approximate these solutions to the nearest *tenth.*

 $x^{2}+9x+4=0$

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

20. Find the slope of the line that is parallel to the line through the pair of points, (2, 6) and

 (6, 8) and then find the slope of the line that is perpendicular through the same set of

 points.

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

21. Factor the trinomial completely.

 $x^{6}-4x^{5}-32x^{4}$

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 22. Simplify the radical.

 $-\sqrt{\frac{150}{225}}$

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 23. Solve the equation for *k*.

 $6\left(h+2\right)-\left(4h+3\right)=4h-3$

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

24. Factor the following binomial completely.

 $256m^{4}-81$

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

25. Solve the equation for *x*.

 $4\left(3x-5\right)+8=9x+6$

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

26. Solve the following inequality, and then graph the solution set.



 $-0.3y\leq -1.5$

**Part III – REVIEW A**

Answer all 5 questions in this part. Each correct answer will receive four credits. For each question, all work is to be shown with the corresponding answer written in the space provided. A correct answer with no work shown will receive one credit. [20]

27. Classrooms on one side of the drama building are all numbered with consecutive odd integers. If

 the first room with the smallest classroom number, on this side of the building is numbered *x,*

 write an expression in *x* for the sum of the first five classroom numbers in a row. Then simplify

 this expression.

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

28. An architect designs a rectangular flower garden such that the width is exactly two-thirds of the

 length. If 360 linear feet of antique picket fencing are to be used to enclose the garden, find the

 dimensions of the garden.

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

29. Find an equation of the line that passes through the pair of coordinates, (4, 8) and (6, 9) and write

 the equation in slope-intercept form.

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

30. Graph the linear equation by finding and plotting the *x* and *y* intercepts.



 $-x+3y=6$

 31. Complete the table of ordered pairs for the linear equation *x = -3y*. After the table is complete,

 plot the ordered pair solutions and graph the line.



|  |  |
| --- | --- |
| ***x*** | ***y*** |
|  | 1 |
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| 9 |  |

Scrap Graph Paper – This sheet will *not* be scored.

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NIAGARA FALLS CITY SCHOOL DISTRICT

MATHEMATICS SEMINAR FINAL EXAM REVIEW

***Formula Reference Sheet***

**Quadratic Equation:** $x=\frac{-b\pm \sqrt{b^{2}-4ac}}{2a}$

**Slope formula:** $m=\frac{y\_{2}-y\_{1}}{x\_{2}-x\_{1}}$

**Point Slope Form:** $y-y\_{1}=m(x-x\_{1})$

**Perimeter of a Rectangle:** $P=2l+2w$

**Area of a Rectangle:** $A=lw$

**Area of a Trapezoid:** $A=\frac{1}{2}h(b\_{1}+b\_{2})$