Instructions: Answer each question on loose leaf, quad-ruled (graph paper), headed properly and written in lead-graphite. Remember to fold paper along the center, work exercises in order top to bottom, left column then right column. Staple multiple pages

1. GV1 pg. 195, #2
2. Gv1 pg. 195, #4
3. GV1, pg. 195, #6

   For questions 4 through 6, determine the direct variation constant and write a direct variation equation.

4. "y" varies directly with "x", and y = 300 when x =-60
5. "y" is directly proportional to 'x'; when y = 8, x = 20
6. The ratio of 'y' to 'x' is constant; when y= -6, x = -14

7. Gv1 pg. 187 #22
8. Gv1 pg. 188 # 24

   Ms. Barno found that the slope of the line that passes through the points (-6, 1) and (2, 5) is 2. Her work is below:

   $$m = \frac{-6-2}{1-5} = \frac{-8}{-4} = 2$$

   Part A: Is her work correct or incorrect? If it is correct, justify her work. If it is incorrect, explain her mistake and what the correct answer should be.

9.

10. State the property represented by the following statement:

    $8 = 4 + 4$

    $4 + 4 = 4 \bullet 2$

    $8 = 4 \bullet 2$

11. State the property that justifies each step of the following solution:

    $7 - 4(3x - 2)$

    $7 + {}^-4(3x + {}^-2)$

    $7 + {}^-12x + 8$

    $7 + 8 + {}^-12x$

    $15 + {}^-12x$

12. $\dfrac{16}{50} =$; write as a decimal rounded to the nearest 100th.

13. $9 - \dfrac{10}{7} =$; write as an improper fraction and a decimal rounded to nearest 10th.

14. Write as a mixed number, reduced: $2.2\overline{7}$

15. Translate into a formula: *"Surface pressure (P) is the ratio of Force (F) to Area (A)."*

16. Translate into a formula: *"The Aspect Ratio (AR) of an aircraft wing is the ratio of the square of the wingspan (b) to the wing Area (S)."*

17. The new McLaren 600LT can accelerate to from 0 to $91\dfrac{ft}{s}$ in $2.9s$. What is it's rate of acceleration, i.e., $\dfrac{\frac{ft}{s}}{s}$?

18. Write as exponents positive: $\dfrac{3x^5y^2}{9x^2y^5}$

19. Write as exponents positive: $-7x^{-7}y^3 \bullet 8y^{-5}x^4$

20. Multiply, writing exponents positive: $\left(-8n^{-4}\right)^3$

Instructions: Answer each question on loose leaf, quad-ruled (graph paper), headed properly and written in lead-graphite. Remember to fold paper along the center, work exercises in order top to bottom, left column then right column. Staple multiple pages

21. Solve: $p - \dfrac{7}{3} = -8$; keep your solution reduced and improper where appropriate.

22. Solve: $-8k = -\dfrac{7}{4}$; write as an improper fraction where appropriate and a decimal rounded to the nearest 10th.

23. Solve: $-\dfrac{4}{3}g - 17 = 17$; keep solution reduced and improper where appropriate.

24. Solve: $5 - \dfrac{6}{7}x = 8$; keep solution reduced and improper where appropriate.

25. Solve: $-7x + 8(-2x - 6) = 3x + 4$; keep solution reduced and improper where appropriate.

26. Solve: $8(x - 3) + 14 = 2(4x + 5)$; keep solution reduced and improper.

27. Solve: $\begin{array}{l} x^2 = 2 \\ x = \end{array}$

28. $\begin{array}{l} x^2 = 841 \\ x = \end{array}$

29. A square has an area of $1024\,m^2$; what is the square's perimeter?

30. $\begin{array}{l} x^3 = -6 \\ x = \end{array}$

31. $\begin{array}{l} x^3 = 2197 \\ x = \end{array}$

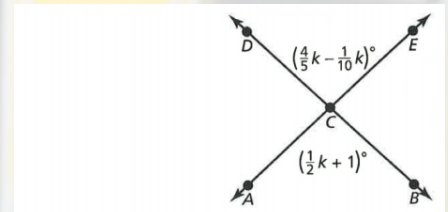32. A cube has a volume of $1000\,in^3$; what is the cube's surface area?

33. In scientific notation, what is the sum of $1.4 \cdot 10^3 + 5.6 \cdot 10^2$?

34. Evaluate $\left(2.4 \cdot 10^4\right)\left(4.5 \cdot 10^3\right)$; write in scientific notation.

35. Estimate the difference: $\sqrt{19} - \sqrt{27}$

In the diagram below $m\angle ACB = m\angle DCE$

36. In the diagram at right, determine the value of k, written as a mixed number.

37. Solve: $5(2m + 3) - (1 - 2m) = 2\big[3(3 + 2m) - (3 - m)\big]$; keep solution reduced and improper.

38. The greater of two consecutive integers is 15 more than twice the smallest; determine the integers.

39. $m = \dfrac{\left(y_2 - y_1\right)}{\left(x_2 - x_1\right)}$, solve this equation for $\left(y_2 - y_1\right)$. *Hint: treat values in grouping symbols as one value!*

40. The vertices of a triangle are $A(-4,6)$, $B(5,6)$, and $C(-4,-2)$. determine the slope of each side of the triangle.

41. In question #40, are the slopes of side $\overline{AB}$ and $\overline{CA}$ the same? Justify with evidence.