DEV 031 – Practice Final Exam **Name:** _____

WEB/HYBRID: Class Time _____ **Instructor:** _____

LECTURE: Class Time _____ **Date:** _____

DIRECTIONS: Answer each of the following questions carefully and completely. Transfer your answers to the answer sheet. You may write on the test or scrap paper that you have been provided, but the instructor will grade ONLY what is on the answer sheet. *On the actual Final Exam, each answer will be worth 6 points, for a total of 300 points.* ***Answers must be labeled, rounded, and reduced where necessary.*** *You will have 1 hour and 50 minutes for this exam.* **You may use a calculator.**

For #1 – 7, simplify the expressions.

[1.4] 1) $-25 - 125 - (-7) - 12$ **Watch Video**

[1.4] 2) $|-20| + 5 - |2|$ **Watch Video**

[1.8] 3) $-4 \bullet 18 \div (-3) \bullet 2$ **Watch Video**

[1.8] 4) $(-2)^5 - (-3)^2$ **Watch Video**

[1.8] 5) $-2(3 - 1) - 3^2$ **Watch Video**

[1.8] 6) $\dfrac{-5+2-7}{6(3-3)}$ **Watch Video**

[1.8] 7) $\dfrac{-6+3^2-(-7)}{7-9-3}$ **Watch Video**

[2.2A] 8) **Multiple choice:** –3(X – 12) = –3X + 36 is an example of _____.

A) the commutative property for addition
B) the associative property for addition
C) the distributive property
D) the addition property of equality **Watch Video**

For #9 – 10, evaluate the expressions.

[2.1] 9) $-4A^3 + B^2$ when A = –1 and B = 4. **Watch Video**

[2.1] 10) $\dfrac{-3R+2S}{R-S}$ when R = –6 and S = –4. **Watch Video**

For #11 – 12, simplify the expressions.

[2.2] 11) $9W + 4(3W - 5) - W$ **Watch Video**

[2.2B] 12) $7A - (3A - 5) - 7$ **Watch Video**

For #13 – 16, solve the equations.

[2.4] 13) $-2P + 6 = -12$ **Watch Video**

[2.4] 14) $-18 + 4 = 24 - 2R$ **Watch Video**

[2.5] 15) $6 - 2X = 14 + 4(X - 5)$ **Watch Video**

[2.5] 16) $4(3W - 6) = 72 + 3(W - 8)$ **Watch Video**

For #17 – 19, simplify the expressions.

[4.2] 17) $\dfrac{-18J^3K^4L^6}{27JK^4L^2}$ **Watch Video**

[4.3] 18) $\dfrac{12A^2}{35B^3} \div \dfrac{4A^4}{14B^5}$ **Watch Video**

[4.4] 19) $\dfrac{1}{2B} + \dfrac{D}{3}$ **Watch Video**

[4.5] 20) **Solve:** One cake recipe calls for $4\dfrac{1}{3}$ cups of flour. Another recipe calls for $6\dfrac{3}{4}$ cups of flour. How many cups of flour would be needed to make both recipes? Find an estimate (3 pts.), and then find the exact answer (3 pts.). **Watch Video**

[4.6] 21) **Simplify:** $\left(-\dfrac{3}{4}\right)^2 \div \dfrac{12}{27}$ **Watch Video**

For #22 – 24, solve the equation.

[4.7] 22) $-\dfrac{2}{3}T = 16$ **Watch Video**

[4.7] 23) $-22 = 1\frac{3}{8}X$ **Watch Video**

[4.7] 24) $\frac{6}{7}Y + 4 = -8$ **Watch Video**

For #25 – 26, write an algebraic expression.

[3.3] 25) Six less than twice a number **Watch Video**

[3.3] 26) The quotient of negative nine and a number is increased by five **Watch Video**

For #27 – 32, write an equation (3 pts.) and solve (3 pts.). Label answers where appropriate (–1 point for missing label).

[3.2] 27) Find the length of one side of a square if it has an area of 49 square meters. **Watch Video**

[3.1] 28) The perimeter of a rectangle is 124 cm. The width is 25 cm. Find the length. **Watch Video**

[3.3] 29) Six times a number is eight less than twice the same number. Find the number. **Watch Video**

[3.3] 30) You purchase four identical packages of light bulbs. You use two bulbs the first month, three bulbs the second month, and an entire package of bulbs the third month. At the end of the third month, you have 13 bulbs remaining. How many light bulbs were in each package? **Watch Video**

[3.4] 31) Susanna and Nikki are splitting $1,620 they earned for painting a house. Nikki worked twice as many hours as Susanna, so she should earn twice as much. How much should each woman receive? **Watch Video**

Susanna	
Nikki	

[3.4] 32) The perimeter of a rectangle is 24 cm. The length of the rectangle is 3 cm more than twice the width. Find the length and width of the rectangle. **Watch Video**

Length	

Width	

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For #33 – 35, solve the equation.

[6.3] 33) $-3(X + 5) + 7 = -5X - 2(2 - X)$ **Watch Video**

[6.3] 34) $\frac{1}{5}(2X + 3) = \frac{1}{2}(X - 4)$ **Watch Video**

[6.3] 35) $-0.75(X + 4) = -1.5 - 4.5$ **Watch Video**

For #36 – 39, write an equation (3 pts.) and solve (3 pts.). Label answers where appropriate (–1 point for missing label).

[6.4] 36) If three times the sum of a number and six is increased by 4, the result is –2. Find the number. **Watch Video**

[6.4] 37) A team plays a total of 26 games in a season. The number of losses is four times the number of tie games and the number of wins is twice the number of losses. How many games did they lose, tie, and win? **Watch Video**

Losses	
Ties	
Wins	

[6.4] 38) Find the measure of an angle whose supplement measures 38° less than three times its complement. **Watch Video**

Complement	
Supplement	

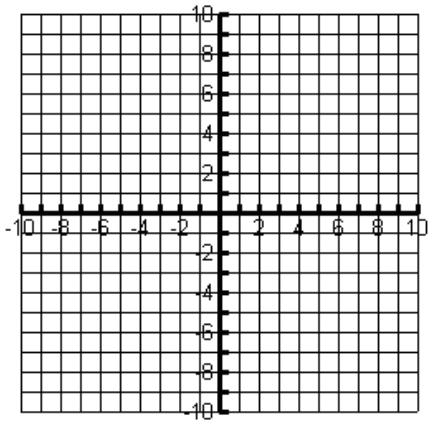
[6.4] 39) If six times the larger of two consecutive odd integers is added to the smaller, the result is 89. Find the two numbers. **Watch Video**

Smaller	
Larger	

[6.5] 40) **Solve the formula for the variable K:** $2L = 4K - M$ **Watch Video**

[7.4] 41) **Multiple choice:** In which quadrant is the point (2, –5) located? **Watch Video**

A) Quadrant I
B) Quadrant II
C) Quadrant III
D) Quadrant IV



For #42 – 46, simplify the expressions. Eliminate any negative or zero exponents.

[8.1] 42) $(-6M^7)(-5M^4)$ **Watch Video**

[8.1] 43) $(4G^5H)^3$ **Watch Video**

[8.2] 44) $(-4)^0 + 3^0$ **Watch Video**

[8.2] 45) F^{-4} **Watch Video**

[8.2] 46) $\frac{H^{-3}}{H^5}$ **Watch Video**

[8.3] 47) **Convert to scientific notation:** 235,000 **Watch Video**

[8.3] 48) **Multiply:** $(4.8 \times 10^3)(2 \times 10^{-8})$. Express the final answer in scientific notation (3 pts.) and standard notation (3 pts.).

Watch Video

[2.1] [2.2] [2.3] 49) **Fill in the Blank:** Determine the most appropriate term (*evaluate*, *simplify*, or *solve*) to complete each sentence.

[p. 153]

a) _____ the expression by replacing A with –4 and B with 3.
b) _____ the equation by finding the value for X.
c) _____ the expression by combining like terms.

Watch Video

[2.3] 50) **Short answer:** A student solves the equation $3X - 5 = 2(X + 5)$ and determines that the solution is $X = 15$. Determine whether or not this solution is correct by finding the balance statement.

Watch Video

DEV 031 – Practice Final Answer Sheet **Name:** _____

WEB/HYBRID: Class Time _____ **Instructor:** _____

LECTURE: Class Time _____ **Date:** _____

1 _____ **21** _____

2 _____ **22** _____

3 _____ **23** _____

4 _____ **24** _____

5 _____ **25** _____

6 _____ **26** _____

7 _____ **27** Equation _____

8 _____ Solution _____

9 _____ **28** Equation _____

10 _____ Solution _____

11 _____ **29** Equation _____

12 _____ Solution _____

13 _____ **30** Equation _____

14 _____ Solution _____

15 _____ **31** Equation _____

16 _____ Susanna _____ Nikki _____

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17 _____

18 _____

19 _____

20 Estimate _____

Exact _____

32 Equation _____

Length _____ Width _____

33 _____

34 _____

35 _____

36 Equation _____

Solution _____

37 Equation _____

Losses _____ Ties _____ Wins _____

38 Equation _____

Solution _____

39 Equation _____

Smaller _____ Larger _____

40 _____

41 _____

42 _____

43 _____

44 _____

45 _____

46 _____

47 _____

48 Scientific Notation _____

Standard Notation _____

49 a) _____

b) _____

c) _____

50

DEV 031 – Practice Final Answer Sheet Key

1 –155

2 23

3 48

4 –41

5 –13

6 undefined

7 –2

8 C

9 20

10 –5

11 20W – 20

12 4A – 2

13 P = 9

14 R = 19

15 X = 2

16 W = 8

17 $-\frac{2J^2L^4}{3}$

21 $1\frac{17}{64}$ or $\frac{81}{64}$

22 –24

23 –16

24 –14

25 2X – 6

26 –9 ÷ X + 5

27 Equation $49 = s^2$

Solution 7 m

28 Equation 124 = 2L + 2(25)

Solution 37 cm

29 Equation 6X = 2X – 8

Solution –2

30 Equation 4X – 2 – 3 – X = 13

Solution 6 light bulbs

31 Equation X + 2X = 1620

Susanna $540 Nikki $1080

32 Equation 2(2X + 3) + 2X = 24

18 $\frac{6B^2}{5A^2}$

19 $\frac{3+2DB}{6B}$

20 Estimate 11 cups

Exact $11\frac{1}{12}$ cups

33 No solution

34 X = 26

35 X = 4

36 Equation 3(X + 6) + 4 = –2

Solution X = –8

37 Equation 4X + X + 2(4X) = 26

Losses 8 Ties 2 Wins 16

38 Equation 180 – X = 3(90 – X) – 38

Solution 26°

39 Equation X + 6(X + 2) = 89

Smaller 11 Larger 13

40 $K = \frac{2L+M}{4}$

41 D (Quadrant IV)

42 $30M^{11}$

43 $64G^{15}H^{3}$

44 2

45 $\frac{1}{F^4}$

46 $\frac{1}{H^8}$

47 2.35×10^{5}

48 Scientific Notation 9.6×10^{-5}

Standard Notation 0.000096

49 a) Evaluate
b) Solve
c) Simplify

50 $3X - 5 = 2(X + 5)$
$3(15) - 5 = 2(15 + 5)$
$45 - 5 = 2(20)$
$40 = 40$; the solution is correct