

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) $-4 \cdot 18 \div (-3) \cdot 2$ [Watch Video](#)

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

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

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

[1.8] 7) $\frac{-6 + 3^2 - (-7)}{7 - 9 - 3}$ [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) $\frac{-3R + 2S}{R - S}$ 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) $\frac{-18J^3K^4L^6}{27JK^4L^2}$ [Watch Video](#)

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

[4.4] 19) $\frac{1}{2B} + \frac{D}{3}$ [Watch Video](#)

[4.5] 20) **Solve:** One cake recipe calls for $4\frac{1}{3}$ cups of flour. Another recipe calls for $6\frac{3}{4}$ 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:** $\left(-\frac{3}{4}\right)^2 \div \frac{12}{27}$ [Watch Video](#)

For #22 – 24, solve the equation.

[4.7] 22) $-\frac{2}{3}T = 16$ [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 | |
|--------|--|

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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 | _____ |

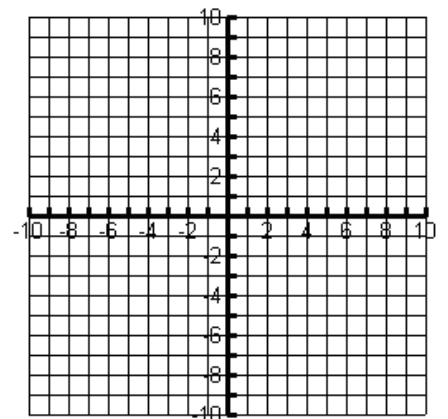
[6.4] 39) If six times the larger of two consecutive odd integers is added to the smaller, the result is 89. Find the two numbers. [Watch Video](#)

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

- [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

WEB/HYBRID: Class Time _____

LECTURE: Class Time _____

Name: _____

Instructor: _____

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 _____

- 17 _____
- 18 _____
- 19 _____
- 20 Estimate _____
- 36 Exact _____
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 _____
- 32 Equation _____
- Length _____ Width _____
- 33 _____
- 34 _____
- 35 _____

49 a) _____

b) _____

c) _____

50

DEV 031 – Practice Final Answer Sheet Key

| | | | |
|----|---------------------|----|--|
| 1 | -155 | 21 | $1\frac{17}{64}$ or $\frac{81}{64}$ |
| 2 | 23 | 22 | -24 |
| 3 | 48 | 23 | -16 |
| 4 | -41 | 24 | -14 |
| 5 | -13 | 25 | $2X - 6$ |
| 6 | undefined | 26 | $-9 \div X + 5$ |
| 7 | -2 | 27 | Equation $49 = s^2$ Solution 7 m |
| 8 | C | 28 | Equation $124 = 2L + 2(25)$ Solution 37 cm |
| 9 | 20 | 29 | Equation $6X = 2X - 8$ Solution -2 |
| 10 | -5 | 30 | Equation $4X - 2 - 3 - X = 13$ Solution 6 light bulbs |
| 11 | $20W - 20$ | 31 | Equation $X + 2X = 1620$ Susanna \$540 Nikki \$1080 |
| 12 | $4A - 2$ | 32 | Equation $2(2X + 3) + 2X = 24$ |
| 13 | $P = 9$ | | |
| 14 | $R = 19$ | | |
| 15 | $X = 2$ | | |
| 16 | $W = 8$ | | |
| 17 | $\frac{2J^2L^4}{3}$ | | |

- 18 $\frac{6B^2}{5A^2}$ Length 9 cm Width 3 cm
- 19 $\frac{3+2DB}{6B}$ 33 No solution
- 20 Estimate 11 cups 34 $X = 26$
- Exact $11\frac{1}{12}$ cups 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