**Week of April 27th Math 9B Continuation of Learning Plan** **Math 9 Teachers**

| Essential Outcome | Lesson/Video | Practice Questions |
|---|---|---|
| Multiply Monomials with monomials | Khan Academy Video<br>https://www.khanacademy.org/math/algebra2/x2ec2f6f830c9fb89:poly-arithmetic/x2ec2f6f830c9fb89:mono-by-poly/v/multiply-monomials-intro<br>Khan Academy Practice Question<br>https://www.khanacademy.org/math/algebra2/x2ec2f6f830c9fb89:poly-arithmetic/x2ec2f6f830c9fb89:mono-by-poly/e/finding-the-product-of-two-monomials | 1. Multiplying monomials (provided below) |
| Multiply monomials with a binomial | Instruction Video:<br>https://www.youtube.com/watch?v=Ogwss96C6xk | 1. Multiplying a monomial by a binomial (provided below) |
| Divide a monomial by a monomial | Instruction Video:<br>https://www.youtube.com/watch?v=jsN3Ndaop5I | 1. Dividing a monomial by a monomial (provided below)<br>2. Dividing a monomial by a monomial 2 (provided below) |
| Divide a binomial by a monomial | Instruction Video:<br>https://www.youtube.com/watch?v=IhAGaX-DPIw | 1. Divide a Binomial by a monomial (provided below) |

**Multiplying Monomials Practice**

Simplify.

**1.** $2x^2(3x)$

**2.** $-9x^7(8x^5)$

**3.** $-4x^3(2x^7)$

**4.** $10x^5(8x^8)$

**5.** $9x^2(3x^3)$

**6.** $-4x^2(6x^9)$

**7.** $-4x^2(3x^{10})$

**8.** $15x^4(3x^9)$

**9.** $7x^2y^5(9x^3y)$

**10.** $-8x^2y^4(3x^3y^{10})$

**11.** $-9x^2y^9(-10x^3y^{10})$

**12.** $9x^2y(x^3y^9)$

**13.** $5x^2y^9(7x^7y^5)$

**14.** $-14x^2(3x^{10}y^3)$

Solutions

1. $6x^3$
2. $-72x^{12}$
3. $-8x^{10}$
4. $80x^{13}$
5. $27x^5$
6. $-24x^{11}$
7. $-12x^{12}$
8. $45x^{13}$
9. $63x^5y^6$
10. $-24x^5y^{14}$
11. $90x^5y^{19}$
12. $9x^5y^{10}$
13. $35x^9y^{14}$
14. $-42x^{12}y^3$

## Multiplying a monomial and a binomial Practice

1) $8x(6x + 6)$

2) $7n(6n + 3)$

3) $3r(7r - 8)$

4) $8(8k - 8)$

5) $10a(a - 10b)$

6) $2(9x - 2y)$

7) $7x(6x + 4y)$

8) $4a(8a - 8b)$

9) $3n(n^2 - 6n + 5)$

10) $2k^3(2k^2 + 5k - 4)$

11) $8r^2(4r^2 - 5r + 7)$

12) $3(3v^2 + 8v - 5)$

13) $7(6x^2 + 9xy + 10y^2)$

14) $2u(6u^2 - 9uv + v^2)$

15) $9(x^2 + xy - 8y^2)$

16) $9v^2(u^2 + uv - 5v^2)$

Answers:

1. $48x^2 + 48x$
2. $42n^2 + 21n$
3. $21r^2 - 24r$
4. $64k - 64$
5. $10a^2 - 100ab$
6. $18x - 4y$
7. $42x^2 + 28xy$
8. $32a^2 - 32ab$
9. $32r^4 - 18n^2 + 15n$
10. $4k^5 + 10k^4 - 8k^3$
11. $32r^4 - 40r^3 + 56r^2$
12. $9v^2 + 24v - 15$
13. $42x^2 + 63xy + 70y^2$
14. $12u^3 - 18u^2v + 2uv^2$

## Dividing a Monomial by a Monomial Practice

1. $\frac{m^{10}}{m^5} =$

2. $\frac{x^3y^2}{2x^2y^2} =$

3. $\frac{4ab^3}{2a^2b^2} =$

4. $\frac{27u^2v^3}{-18u^4v^5} =$

5. $\frac{13c^9d^{10}}{-26c^9d} =$

6. $\frac{3s^5t^7}{-3s^5t^7} =$

7. $\frac{-52x^3y^2z}{13xy^2} =$

8. $\frac{8xy^2}{16x^3y^5} =$

9. $\frac{5x^4}{5} =$

10. $\frac{18x^2y}{24xy} =$

11. $\frac{56s^2t^3}{4s^2t} =$

12. $\frac{48a^3bc^5}{12a^5b^3c^2} =$

13. $\frac{25x^2y}{-15xy^2} =$

14. $\frac{8m^2n^2}{12m^2n^3} =$

15. $\frac{-17c^5d^4}{-51cd^3} =$

16. $\frac{24x^2y^3z^4}{44x^4y^3z^2} =$

1. $\frac{m^{10}}{m^5} = m^5$
2. $\frac{x^3y^2}{2x^2y^2} = \frac{x}{2}$
3. $\frac{4ab^3}{2a^2b^2} = \frac{2b}{a}$
4. $\frac{27u^2v^3}{-18u^4v^5} = \frac{3}{-2u^2v^2}$
5. $\frac{13c^9d^{10}}{-26c^9d} = \frac{d^9}{-2}$
6. $\frac{3s^5t^7}{-3s^5t^7} = -1$
7. $\frac{-52x^3y^2z}{13xy^2} = -4x^2z$
8. $\frac{8xy^2}{16x^3y^5} = \frac{1}{2x^2y^3}$
9. $\frac{5x^4}{5} = x^4$
10. $\frac{18x^2y}{24xy} = \frac{3x}{4}$
11. $\frac{56s^2t^3}{4s^2t} = 14t^2$
12. $\frac{48a^3bc^5}{12a^5b^3c^2} = \frac{4c^3}{a^2b^2}$
13. $\frac{25x^2y}{-15xy^2} = -\frac{5x}{3y}$
14. $\frac{8m^2n^2}{12m^2n^3} = \frac{2}{3n}$
15. $\frac{17c^5d^4}{-51cd^3} = \frac{c^4d}{3}$
16. $\frac{24x^2y^3z^4}{44x^4y^3z^2} = \frac{6z^2}{-11x^2}$

## Dividing a Monomial by a Monomial-2 Practice

# Incredible Irony

**Believe it or not, the people of Washington, D.C., did not always have the right to vote for the position of President of the United States. How many Presidents had the United States had before these people were allowed to vote?**

To find out, simplify each term. Match your answers to those given. Write the letter corresponding to the solution above each problem number at the bottom of the page to spell out the answer.

| | | | |
|---|---|---|---|
| ____ 1. | $\frac{x^2y}{xy}$ | R. | $\frac{1}{2x}$ |
| ____ 2. | $\frac{-2x^2y}{18xy}$ | S. | $\frac{-4x}{3y^3}$ |
| ____ 3. | $\frac{10x^2y}{10x^2y}$ | T. | $x$ |
| ____ 4. | $\frac{13xy}{26x^2y}$ | Y. | $\frac{-3}{xy}$ |
| ____ 5. | $\frac{(9y)^3}{9y}$ | X. | $9x^6$ |
| ____ 6. | $\frac{-18xy^2}{6x^2y^3}$ | H. | $\frac{-x}{9}$ |
| ____ 7. | $\frac{-12x^2y}{9xy^4}$ | I. | $-2y^3$ |
| ____ 8. | $\frac{(-3xy)(6x^2y^4)}{9x^3y^2}$ | T. | $81y^2$ |
| ____ 9. | $\frac{(3x^2)^3(2xy)}{6xy}$ | I. | 1 |

___ ___ ___ ___ ___ ___ – ___ ___ ___

1 2 3 4 5 6 7 8 9

1. $x$
2. $-x/9$
3. 1
4. $1/(2x)$
5. $81y^2$
6. $-3/(xy)$
7. $(-4x)/(3y^3)$
8. $-2y^3$
9. $9x^6$

thirty-six

## Dividing a Binomial by a Monomial Practice

1. $(6x^2 + 2xy) \div 2x$ $= 3x + y$
2. $(-x^3y + 5xy) \div (-xy)$ $= x^2 - 5$
3. $(3a^3bc - 9ab^2c) \div 3abc$ $= a^2 - 3b$
4. $(2a^3b^2 - 10ab^3c) \div 2ab^2$ $= a^2 - 5bc$
5. $(-uv^2w + 2u^3v) \div uv$ $= -vw + 2u^2$
6. $(6xy^2 + 2xz) \div 2x$ $= 3y^2 + z$
7. $(uvw - v^2w) \div (-vw)$ $= -u + v$
8. $(5ax^2 + 15a^3x) \div 5ax$ $= x + 3a^2$
9. $(6y^3z - 2y^2z^2) \div 2y^2z$ $= 3y - z$
10. $(u^3v - uv^3) \div uv$ $= u^2 - v^2$