

HW #1

Kerry Ojakian's MTH 28 Class

Due Date: Tuesday February 25

General Instructions:

- Homework must be stapled, be relatively neat, and have your name on it.
- Use tutors, work with other students, but ... don't copy!

The Assignment

1. Evaluate.

$$(a) \left(\frac{1}{5}\right) \left(\frac{4}{6}\right) =$$

$$(b) \left(\frac{2}{5}\right) (5) =$$

2. Divide.

$$(a) \frac{5}{6} \div \frac{2}{9} =$$

$$(b) 4 \div \frac{4}{7} =$$

3. Evaluate

$$(a) \frac{1}{9} - \frac{2}{9} =$$

$$(b) \frac{20}{15} - \frac{25}{15} =$$

4. Evaluate

$$(a) \frac{5}{3} + \frac{7}{4} =$$

$$(b) 2 + \frac{2}{5} =$$

5. Evaluate

$$(a) \frac{5}{2} - 1 =$$

$$(b) \frac{9}{3} - \frac{4}{7} =$$

6. Evaluate

(a) $(5 \cdot 2)^2 =$

(b) $13 + 0 \div 7 =$

7. Evaluate $2 \cdot |4 - 5|^3 - (5 - 4)^2 =$

8. Evaluate

(a) $-\left(\frac{1}{10} - \frac{2}{5}\right) =$

(b) $\frac{1}{3} - \frac{1}{6} \div \frac{1}{2} =$

9. Evaluate

(a) $5 \cdot \frac{2}{5} + \left(\frac{1}{2} - 6\right) =$

(b) $\frac{4}{3} \cdot \frac{1}{8} - \left(\frac{1}{2} - 1\right) =$

10. Find the area of a rectangle with width $\frac{7}{2}$ and height $\frac{8}{3}$.

11. Find the perimeter of a square with side length $\frac{10}{3}$:

12. Simplify.

(a) $\frac{10y^9}{4y^5} =$

(b) $x^7y^2x^6y^3 =$

13. Circle the terms in each expression, and find the coefficient of each term.

(a) $3x + 5y - 6$

(b) $x^2 - 5x + 6$

14. Perform the operation and simplify. Write the answer in descending order of degree.

$(x^2 + 3x - 2) + (3x^2 - 5x - 6)$

15. Perform the operation and simplify. Write the answer in descending order of degree.

$(3x^3 - 4x - 2x^2) - (3x^2 - 6 + x)$

16. Multiply.

(a) $3x^2(x + 5) =$

(b) $2x(x^3 - 7x^2 + 4x + 6) =$

17. Multiply.

$(2x - 3)(5x - 6) =$

18. Multiply.

$(x - 3)^2 =$

19. Evaluate the following (by first simplifying, then evaluating).
 $g(t) = -t^2 - t - 1 + t + 2t^2 + 1$. Evaluate $g(-1)$ and $g(0)$.
-

20. Evaluate

(a) $4xy$ if $x = 4$, $y = -3$

(b) $x^2 - y^2 + 3$ if $x = 2$, $y = 3$

21. Let $h(x) = 13 + 5 \cdot (x - 2)^2$.

(a) Evaluate $h(0)$.

(b) Evaluate $h(2)$.

22. Let $h(u) = \frac{5 + u}{u - 5}$. Evaluate $h(0)$ and $h(-1)$.

23. **Triangle Area Formula:**

$$\text{Area} = \frac{1}{2} \times B \times H$$

Problem: Find the area of a triangle of height 10 and base 3.

24. Factor out the GCF.

(a) $20A + 30yA =$

(b) $30xA - 5A =$

25. Factor out the GCF.

$$(a) \ x(x + 1) - 5(x + 1) =$$

$$(b) \ 9(y - 1) - 5x(y - 1) =$$

26. Factor by Grouping.

$$mn - 6m - 4n + 24 =$$

27. Factor using the GCF and/or using difference of squares.

$$x^2 + 9x =$$

28. Factor using the GCF and/or using difference of squares.

$$x^2 - 9 =$$

29. Factor using the GCF and/or using difference of squares.

$$9 - 25x^2 =$$

30. Factor the trinomial.

$$x^2 - 7x - 8 =$$

31. Factor the trinomial.

$$6x^2 + x - 15 =$$

32. Factor. $a^5 - 9a^3 =$

33. Factor. $4x^5y - 32x^2y =$

34. Factor. $36x^2y + 15xy - 6y =$

35. Factor. $16x^2 - 24xy + 9y^2 - 64 =$

36. Factor.
 $12x^4y^3 - 18x^3y^2 - 6x^4y^6 =$
