

Math 9 Core Review

No calculator. Show your work in the space provided.

Part 1: BEDMAS

1. $\frac{2}{3} - \frac{4}{5}$

2. $3 - \frac{5}{7}$

3. Convert the mixed fraction $2\frac{2}{5}$ to an improper fraction in the form $\frac{a}{b}$

4. Evaluate 3.5×2.7

5. $\frac{2}{9} \times \frac{5}{3}$

6. $\frac{3}{4} \times 4$

7. $\frac{2}{3} \div \frac{2}{7}$

8. $3 \div \frac{4}{5}$

9. $2 - 2 \times 4$

10. $2 - 4 \times 5 + 5$

11. $0/1$

12. $\frac{16}{2 \times 4}$

13. $3^2 - 2(1 - 5)^2$

Part 2: Polynomials

14. $2x + x - 5x$

15. $4x^2 - 2x + x^2 + 7x$

16. $5x - 4 + x - (2 - x)$

17. $3x^2(2 + 3x - 5x^2)$

18. $\frac{24x^2 - 12x}{4x}$

Part 3: Algebra and Equations

19. Solve $8x = 20$

20. Solve $\frac{x}{3} = 5$

21. Solve $\frac{2}{x} = \frac{4}{5}$

22. Solve $\frac{9}{x} = 5$

23. Solve $2 + x = 3(x - 7)$

Part 4: Exponents

24. Evaluate 5^3

25. Write as a single power: $z \times z \times z \times z \times z = z^?$

26. Evaluate $(-7)^2$

27. Evaluate $(-4)^3$

28. Simplify $x(x^3)(x^5)$

29. Simplify $(3x^3)^3$

30. Simplify $(-\frac{3}{4})^2$

31. Simplify $\frac{x^9}{x^5}$

32. Simplify $(\frac{x^3}{4})^3$

33. Evaluate -5^2

34. Evaluate $(-1)^6$

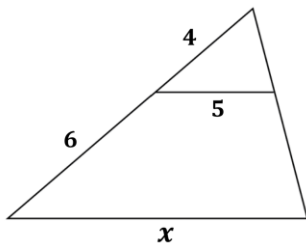
35. Simplify $(x \cdot \frac{x^7}{x^3})^2$

36. Simplify $\frac{x}{x^4} \div \frac{x^3}{x^5}$

37. Simplify $\frac{27x^5y^6}{9xy^3}$

Part 5: Proportional Reasoning

38. Find x in the diagram below:



Part 6: Proportional Reasoning

39. Where is the point $(2, -3)$ located?

- A. Top right (Quadrant I)
- B. Top left (Quadrant II)
- C. Bottom left (Quadrant III)
- D. Bottom right (Quadrant IV)

40. $y = 3x - 5$

a. Sketch this line

b. Slope?

c. y -intercept?

41. Sketch the line $y = -x + 5$

42. Sketch the line $y = -3$

Part 7: Statistics in Society

43. Find the average of the numbers 2, 10, 9

44. The mean of the numbers 3, 10, k is 8. Find k .

45. Find the median of the numbers 2, 10, 16, 100

46. Find the median of the numbers 3, -20 , 10, 100

47. Find the range of the numbers 6, -50 , 20, 4000

Part 8: Financial Literacy

48. You inherit \$1000 for 3 years at 10% interest. Use the simple interest formula $I = P \times r \times t$ to roughly estimate how much you owe in 3 years.
49. Suppose you have \$5000 to invest. If you earn 20% interest. How much do you earn in real life after two years? Do not use the simple interest formula.
50. You celebrate graduating from Grade 9 math by buying your family a \$300 meal (which includes taxes). You want to add 15% tip to this subtotal. How much do you pay in total?