

Practice Problems Final

Problem 1. Evaluate

$$5(7 + 3) - 2[(6 - 3) - 4^2] + 1.$$

Problem 2. Simplify and write your answer with positive exponents:

$$(p^{-4}q^3)^8.$$

Problem 3. Convert -8.05×10^{-12} into standard notation.

Problem 4. Simplify

$$\left(\frac{7}{8}\right)^{-\frac{1}{4}} \times \left(\frac{7}{8}\right)^{\frac{1}{2}} \times \left(\frac{7}{8}\right)^{\frac{3}{4}}.$$

Problem 5. What is the degree of the polynomial $q^7 - 2q + 3q^3 - 9q$? What is the coefficient of q^6 in this polynomial?

Problem 6. Subtract

$$\frac{3x}{2(x-1)} - \frac{4}{(x-1)(x+2)}.$$

Problem 7. Find the distance between the points $(7, 4)$ and $(3, 1)$. Also, find the mid-point of the line joining these two points.

Problem 8. The difference in the age of two people is 20 years. If 5 years ago, the elder one of the two was 5 times as old as the younger one, then find their present ages.

Problem 9. The perimeter of a tablet of graph paper is 48 in. The length is 6 in more than the width. Find the area of the graph paper.

Problem 10. Simplify:

$$\frac{1 + 5i}{-3i}$$

Problem 11. The area of a rectangular plot is 528 m^2 . The length of the plot is one more than twice its breadth. Find the length and breadth of the plot.

Problem 12. Solve for x :

$$\sqrt{x} + 2 = x.$$

Problem 13. Solve for x :

$$|x - 1| \geq 2.$$

Problem 14. Solve for r :

$$\frac{|3 + r|}{7} \leq 5.$$

Problem 15. Solve for a :

$$5a^2 - 5a = 35.$$

Problem 16. Solve for x :

$$\frac{x}{3} + \frac{3}{x} = \frac{17}{4}.$$

Problem 17. Evaluate:

$$\frac{7 - i}{2 + 10i}.$$

Problem 18. Solve for x :

$$9 - 2(x - 5) = x + 20.$$

Problem 19. Suppose that L denotes the line passing through the points $(-9, -3)$ and $(11, 4)$. Find the slope of a line perpendicular to L .

Problem 20. Solve for b :

$$\frac{1}{b^2 - 7b + 10} + \frac{1}{b - 2} = \frac{2}{b^2 - 7b + 10}.$$