

Math 111 Skills Test Practice

Equations of a line

1. Find the equation of the line which passes through (1,6) and (-2, 10)
2. Find the equation of a line which passes through (-4, 7) and (0, 2)
3. Find the equation of a line which passes through (3, 5) and (-1, 5)
4. Find the equation of a line which passes through (8, 2) and (8, 0)

Solving Equations

5. Solve for x : $3x^2 + 4x + 2 = 0$
6. Solve for x : $x^2 + 5x - 6 = 0$
7. Solve for x : $2x^2 + 3x - 2 = 0$
8. Solve for x : $x^2 + 10x + 25 = 0$
9. Solve for x : $\sqrt{x} + 6 = x$
10. Solve for x : $\sqrt[3]{x} = 3$
11. Solve for x : $\sqrt{x} - 4 = 0$

Simplifying Expressions

12. Add: $\frac{4}{x} + \frac{x}{3}$
13. Multiply: $\frac{3}{x-2} \cdot \frac{x}{x^2-4}$
14. Subtract: $\frac{2}{x+3} - \frac{5}{x}$
15. Add: $\frac{x}{2x^2+2x} + \frac{2}{x+1}$
16. Divide $\frac{x+2}{x^2+5x+6} \div \frac{x}{x+3}$
17. Rewrite without rational or negative exponents: $x^{-4/5}$
18. Rewrite without rational or negative exponents: $3x^{5/8}$
19. Simplify: $\sqrt{50x^7y^{16}}$
20. Simplify: $\frac{\sqrt{12x^9}}{\sqrt{3x^3}}$

Math 111 Skills Test Practice – Answers

Equations of a line

1. $y = -\frac{4}{3}x + \frac{22}{3}$
2. $y = -\frac{5}{4}x + 2$
3. $y = 5$
4. $x = 8$

Solving Equations

5. No real solutions or $x = \frac{-2 \pm i\sqrt{2}}{3}$
6. $x = -6, 1$
7. $x = \frac{1}{2}, -2$
8. $x = -5$
9. $x = 9$
10. $x = 27$
11. $x = 16$

Simplifying Expressions

12. $\frac{x^2 + 12}{3x}$
13. $\frac{3x}{x^3 - 2x^2 - 4x + 8}$
14. $\frac{-3x - 15}{x^2 + 3x}$
15. $\frac{5}{2x + 2}$
16. $\frac{1}{x}$
17. $\frac{1}{\sqrt[5]{x^4}}$
18. $3\sqrt[8]{x^5}$
19. $5x^3y^8\sqrt{2x}$
20. $2x^3$