

MAT 141 Assessment of Readiness

1. Evaluate: $-7^0 + 2^{-1}$

2. Multiply, then simplify: $(5x - 4)(8x + 3)$

3. Solve for w : $V = lwh$

4. Solve for x : $\frac{10}{15x} = \frac{6}{7}$

5. Factor: $49x^2 - 81y^2$

6. Simplify, then write your answers with positive exponents only: $\frac{24x^9y^{10}}{3x^6y^{12}}$

7. If the legs in a right triangle are 6 inches and 9 inches, find the length of the hypotenuse. Round your answer to the nearest tenth.

8. Evaluate: $-2|5 - 7| + |6|$

9. Use the quadratic formula to solve the equation $3x^2 - 10x + 8 = 0$

10. Find the slope of the line passing through the points $(-3, -2)$ and $(-5, 10)$

11. Simplify: (a) $\frac{x^2 + 1}{x}$

(b) $\frac{x^2 + 5x + 6}{x^2 - 9}$

12. Solve for x : $x^2 - x = 6$

13. Solve for x : $\frac{x-3}{x+4} = 0$

14. True or false?

(a) $3^{-2} = -3^2$

(b) $\frac{x}{2} = \frac{1}{2}x$

(c) $\frac{x}{\frac{1}{2}} = 2x$

(d) $(a+b)^2 = a^2 + b^2$

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(Answer Key)

1. $-\frac{1}{2}$

2. $40x^2 - 17x - 12$

3. $w = \frac{V}{lh}$

4. $x = \frac{7}{9}$

5. $(7x+9y)(7x-9y)$

6. $\frac{8x^3}{y^2}$

7. 10.8 inches

8. 2

9. $x = 2, x = \frac{4}{3}$

10. -6

11. (a) $x + \frac{1}{x}$

(b) $\frac{x+2}{x-3}$

12. $x = 3, -2$

13. $x = 3$

14. (a) false
(b) true
(c) true
(d) false