

More practice problems on Algebra and Trigonometry

Most of the problems are similar to your quiz. Make sure you now know how to solve them!

1. Line problems.

- (a) Find the point of intersection of the straight lines $y = 2x + 3$ and $x + y = 8$.
- (b) The line that passes through $(1, 2)$ and is perpendicular to the line $2y = 3x + 1$.

2. Simplify.

- (a) Simplify the following algebraic expression: $\left(\frac{1}{x} - \frac{1}{x+1}\right) / \left(\frac{x}{x+1} + 2x^{-1}\right)$
- (b) If $f(r) = \pi/r^2$, find and simply $\sqrt{f(t^{1/2})}$
- (c) $\frac{1}{1 + \tan^2 x}$

3. Equations.

- (a) $\frac{(x^2 + 5) - (x + 2) \cdot 2x}{(x^2 + 5)^2} = 0$
- (b) $\sin(2x + 1) = 0$
- (c) Let $f(x) = \frac{7}{x} + \frac{7}{x+4}$. Find all x for which $f(x) = 1$.

4. Find the exact values. Write your answer as a fraction, not as a decimal.

- (a) $\sin^2 \frac{\pi}{4} + \sec^2 \frac{\pi}{3}$
- (b) $e^{-2 \ln 3} + \log^2 20$
- (c) $\csc \frac{2\pi}{3}$

5. Solve the following inequalities for x .

- (a) $\frac{6x^2 - 5x + 1}{3x^2 + 1} < 0$
- (b) $\sqrt{3x^2 + x} > 2$
- (c) $\sqrt{x-3} + \sqrt{x+2} > 5$

6. Domains.

- (a) $y = \sqrt[4]{|x-4|-3}$
- (b) $y = (x^2 - 3x + 2)^{-1/3}$
- (c) $y = \sqrt[2]{\sin x - 1}$