

ASSESSMENT TEST – READINESS FOR MATH 30
Topics and Sample Questions

1. Elementary operations with numerical and algebraic fractions

$$\frac{3x-2}{x+2} - \frac{2}{x-2} =$$

- a. $\frac{3}{x+2}$ b. $\frac{3x-2}{x^2-4}$ c. $\frac{3x}{x^2-4}$ d. $\frac{x(3x-10)}{x^2-4}$ e. $\frac{3x(x-4)}{x^2-4x+4}$

2. Operations with exponents and radicals

$$\frac{x^{3a+2}}{x^{2a-1}} =$$

- a. x^{a+3} b. x^{a-3} c. x^{5a-1} d. x^{a+1} e. x^3

3. Linear equations and inequalities

For what value of t does $\frac{2t-1}{3t+4} = 2$

- a. -6 b. $-\frac{9}{4}$ c. $\frac{3}{2}$ d. $\frac{9}{4}$ e. no solution

4. Polynomials and polynomial equations

If $(x-1)(x^2-4) + 2(x-1)(x+2) = (x-1)P$, then $P =$

- a. x^2-2 b. x^2 c. $x(x+2)$ d. x^2+2 e. $(x+2)^2$

5. Functions

If $f(x) = 2x+5$ and $g(x) = 1-x^2$, then $f(g(2)) =$

- a. -3 b. -1 c. 1 d. 2 e. 9

6. Trigonometry

If $\sin\theta = \frac{3}{5}$ and $0 < \theta < \frac{\pi}{2}$, then $\tan\theta =$

- a. $\frac{3}{2}$ b. $\frac{4}{3}$ c. $\frac{5}{4}$ d. $\frac{4}{5}$ e. $\frac{3}{4}$

7. Logarithmic and exponential functions

$$\text{Log}_3 27 =$$

a. 81

b. 9

c. 3

d. $\frac{1}{3}$

e. $\frac{1}{9}$

ANSWERS:

1. d; 2. a; 3. b; 4. c; 5. b; 6. e; 7. c