

**TOPICS AND SAMPLE QUESTIONS FROM THE ASSESSMENT TEST FOR
Math 30 (Calculus)**

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 $0 < \theta < \frac{\pi}{2}$

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.