

Sample MAPE Questions

Sample questions for the Intermediate Algebra MAPE:

- If $x = \frac{1}{4}$, then $x + \frac{1}{x} - 3 =$
a) $-\frac{11}{4}$ b) -2 c) $\frac{1}{4}$ d) $\frac{5}{4}$ e) $\frac{17}{4}$
- $\frac{x+2}{x^2-9} \div \frac{3x+6}{9x-27} =$
a) $\frac{3}{x-3}$ b) $\frac{3}{x+3}$ c) $\frac{1}{x}$ d) $-\frac{6}{x-9}$ e) $\frac{3}{x}$
- If $m \neq n$ and $m(x-n) = nx + s$, then $x =$
a) $\frac{mn+s}{m-n}$ b) $\frac{mn+s}{m+n}$ c) $\frac{n-s}{m-n}$ d) $\frac{n+s}{m-n}$ e) $\frac{n+s}{m+n}$
- $\frac{1}{1+\sqrt{3}} =$
a) $\frac{1-\sqrt{3}}{2}$ b) $\frac{-1+\sqrt{3}}{2}$ c) $\frac{-1+\sqrt{3}}{8}$ d) $-\frac{1+\sqrt{3}}{8}$ e) $\frac{1+\sqrt{3}}{2}$
- If $y > 0$, then $\sqrt{169y^2 - 25y^2} =$
a) y b) $8y$ c) $12y$ d) $13y$ e) $144y$
- If $3^x = 2$, then $x =$
a) $\frac{2}{3}$ b) $\frac{3}{2}$ c) $\log_2 3$ d) $\log_3 2$ e) $\log_{10} \frac{2}{3}$
- A solution of $x^2 + 2x = -10$ is
a) -12 b) -10 c) $-1 - 3i$ d) 1 e) $3i$
- Let $f(y) = y^2 - ky - 5$. If $f(2) = 7$, then $k =$
a) -4 b) -3 c) 2 d) 4 e) 7

Answers to the Intermediate Algebra Exam:

1 = (d), 2 = (b), 3 = (a), 4 = (b), 5 = (c), 6 = (d), 7 = (c), 8 = (a)

Sample Questions for the Precalculus Exam:

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

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

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

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

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

- (a) -6 (b) -9/4 (c) 3/2 (d) 94 (e) There is no value of t satisfying this equation

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

- (a) -3 (b) -1 (c) 1 (d) 2 (e) 9

6. $\log_3 27 =$

- (a) 81 (b) 9 (c) 3 (d) 1/3 (e) 1/9

7. If $\sin \theta = 3/5$ and $0 < \theta < \pi/2$, then $\tan \theta =$

- (a) 3/2 (b) 4/3 (c) 5/4 (d) 4/5 (e) 3/4

8. If $f(x) = x^3 - 3$, then $f^{-1}(5) =$

- (a) -4 (b) 122 (c) 12 (d) 2 (e) $\frac{1}{2}$

Answers to the Precalculus Exam:

1 = (d), 2 = (a), 3 = (b), 4 = (c), 5 = (b), 6 = (c), 7 = (e), 8 = (d)