Elementary Algebra Sample Test

Topic I – Arithmetic Operations

1) $\frac{4}{18}\times\frac{3}{8}$

a) $\frac{1}{6}$ b) $\frac{2}{9}$ c) $\frac{1}{12}$ d) $\frac{4}{12}$

2) $8.05-(2-1.7)$

a) 4.5 b) 4.35 c) 8.02 d) 7.75

3) $\frac{c}{d}+2=$

a) $\frac{c+2d}{d}$ b) $\frac{c+2}{d+2}$ c) $\frac{c+2}{d}$ d) $c+2d$

4) $8x-4(2x-5)-2$

a) $6x-7$ b) $6x+18$ c) -22 d) 18

Topic II – Polynomials

5) $(x^2+5x+4)-(2x^2-3x+6)$

a) $3x^2+2x-2$ b) $-3x^2+2x+10$ c) $-x^2+8x-2$ d) $-x^2+2x+10$

6) $(x+4)(x-6)=$

a) $x^2+2x+10$ b) $x^2+2x-12$ c) $x^2+2x-24$ d) $x^2-2x-24$

7) If $x=-4$ and $y=2$, then $x^2-y^2=$

a) 12 b) 10 c) -20 d) -18

8) One of the factors of x^2-x-6 is

a) x+3 b) x+2 c) x-1 d) x-2

Topic III – Linear Equations & Inequalities

9) If $6x-3=8x-9$, then $x=$

a) -6 b) -3 c) 3 d) $-\frac{6}{7}$

10) If $y=x-8$ and $2x-y=4$, then $x=$

a) 0 b) 2 c) -2 d) -4

11) $4x-7>9x+13$ is equivalent to

a) $6>5x$ b) $4>x$ c) $x>-4$ d) $x<-4$

Topic IV – Quadratic Equations

12) One of the solutions of the equation $(x+4)(2x-5)=0$ is

a) $\frac{5}{2}$ b) 4 c) 0 d) $-\frac{5}{2}$

13) What are the possible values of x such that $3x^2 - 2x = 0$?

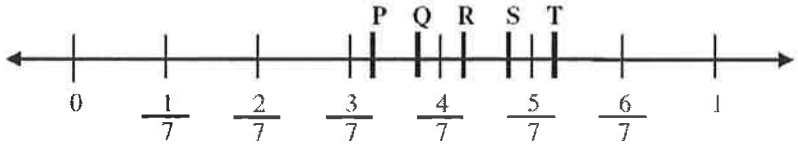
a) $-\frac{2}{3}$ only b) 0 only c) 0 and $-\frac{2}{3}$ d) 0 and $\frac{2}{3}$

14) One of the solutions of the equation $x^2 + 4x = 12$ is

a) 3 b) 2 c) -2 d) 6

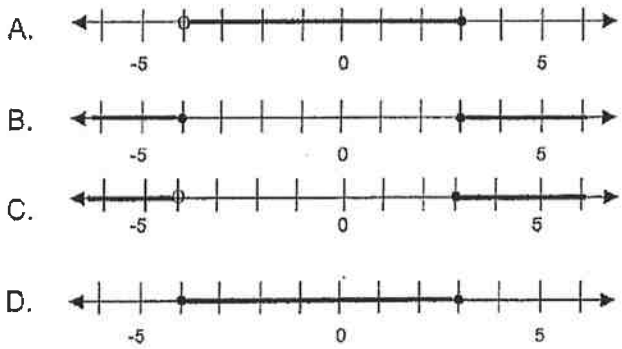
Topic V – Graphing

15) On the number line below, which letter best locates $\frac{5}{9}$?

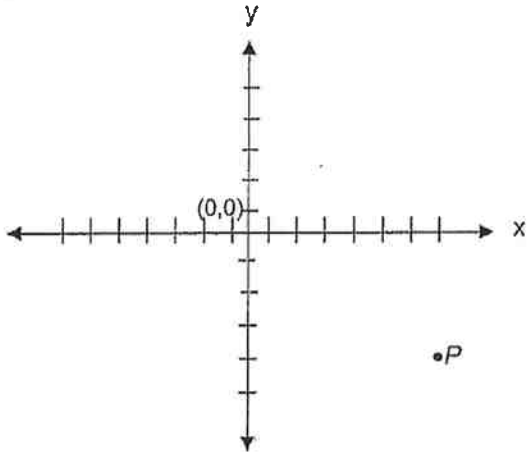


a) Q b) R c) S d) T

16) Which of the following graphs represents all values of x such that $x > -4$ and $x \leq 3$?



17) What are the coordinates of point P, shown in the figure below?



a) (7, 4) b) (- 7, 4) c) (4, - 7) d) (7, - 4)

Topic VI – Rational Expressions

18) $\frac{2}{x+1}-\frac{1}{x-1}=$

a) $\frac{1}{x+2}$ b) $\frac{x-3}{x^2-1}$ c) $\frac{x+3}{x^2-1}$ d) $\frac{3x-1}{x^2-1}$

19) $\frac{4(x^2-4)}{x-2}=$

a) 4 b) $4x^2+8$ c) $4x+8$ d) $4x-8$

20) $\frac{3x-7}{x+2}-\frac{5}{x^2-4}=$

a) $\frac{3x^2-13x+9}{x^2-4}$ b) $\frac{3x-2}{x+2}$ c) $\frac{-3x-12}{x^2-4}$ d) $\frac{3x^2-x+9}{x+2}$

Topic VII – Exponents & Square Roots

21) $2^4 \cdot 2^5 =$

a) 2^{20} b) 2^9 c) 4^{20} d) 4^9

22) $3^0+3^2=$

a) 6 b) 8 c) 9 d) 10

23) $\sqrt{63}=$

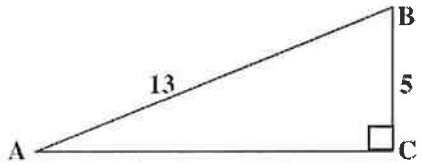
a) $3\sqrt{7}$ b) 7 c) $7\sqrt{3}$ d) $9\sqrt{7}$

24) If $x>0$, then $\sqrt{64x^{16}}=$

a) $8x^8$ b) $8x^4$ c) $16x^4$ d) $32x^8$

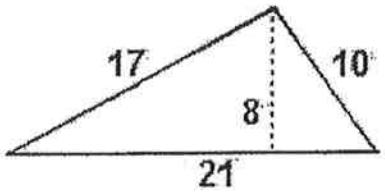
Topic VIII – Geometry

25) In the triangle shown below, what is the length of AC?



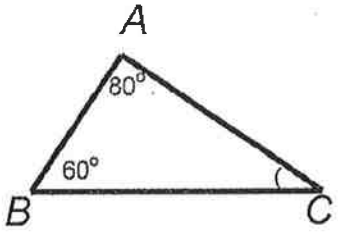
a) $\sqrt{194}$ b) 12 c) $\sqrt{18}$ d) 8

26) What is the area and perimeter of the triangle below?



A. $A = 210$ $P = 46$ B. $A = 105$ $P = 35$ C. $A = 168$ $P = 46$ D. $A = 84$ $P = 48$

27) In the triangle below, what is the degree measure of $\angle C$?



A. 40° B. 50° C. 60° D. 10°

Topic IX – Word Problems

28) If Eric has x dimes and y nickels, which of the following represents the amount of money he has, in cents?

a) $5x+10y$ b) $10x+5y$ c) $(10+5)x$ d) $15(x+y)$

29) 100 is the square of twice what number?

a) 10 b) 4 c) 50 d) 5

30) What percent of 33 is 44?

a) 133 b) 60 c) 75 d) 33

31) If the cost of 5 feet of chain cost is \$4.00, what length of chain may be purchased with \$9.00?

a) 12 ft b) 11.25 ft c) .44 ft d) 10.5 ft

EA - Elementary Algebra Readiness Sample Test Evaluation
(Places into Math 255 - Math 103)

Problem #	Your Answer	Correct Answer	Topic
1		c	Operations with Fractions
2		d	Operations with Decimals
3		a	Simplifying Variable Expressions
4		d	Add/Subtract Like Terms - Distributive Property
5		c	Add/Subtract Like Terms of a Variable Expression
6		d	Multiply Binomials - FOIL
7		a	Substitution into a Variable Equation
8		b	Factor Quadratic Expressions
9		c	Solve Linear Equations
10		d	Solve System of 2 Equations 2 Unknowns
11		d	Solve Linear Inequality
12		a	Solve Quadratic Equations
13		d	Solve Quadratic Equations
14		b	Solve Quadratic Equations
15		a	Point on a Number Line
16		a	Graphing an Inquality on a Number Line
17		d	Coordinate Plane
18		b	Simplify a Rational Expression
19		c	Simplify a Rational Expression
20		a	Simplify a Rational Expression
21		b	Exponents
22		d	Exponents
23		a	Simplify Square Root
24		a	Simplify Square Root
25		b	Pythagorean Theorem
26		d	Perimeter & Area
27		a	Properties of a Triangle
28		b	Translating Word Problems to Variable Expressions
29		d	Solve Word Problem
30		a	Percentage Word Problem
31		b	Solve Word Problem

Problem #	1) What concepts, formulas, definitions, etc. does one need to have at hand when successfully solving this problem? 2) Where did you find this information?