



## 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

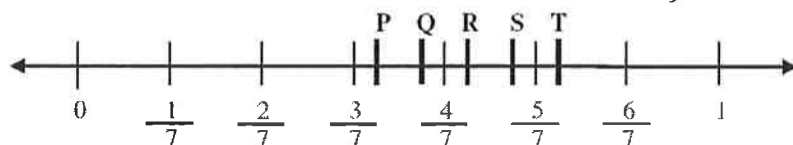
- 12) One of the solutions of the equation  $(x + 4)(2x - 5) = 0$  is  
a)  $\frac{5}{2}$       b) 4      c) 0      d)  $-\frac{5}{2}$

- 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  $\frac{2}{3}$

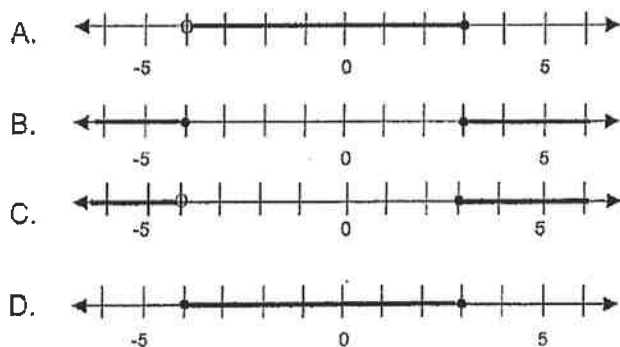
- 14) One of the solutions of the equation  $x^2 + 4x = 12$  is
- a) 3      b) 2      c) -2      d) 6

### Topic V – Graphing

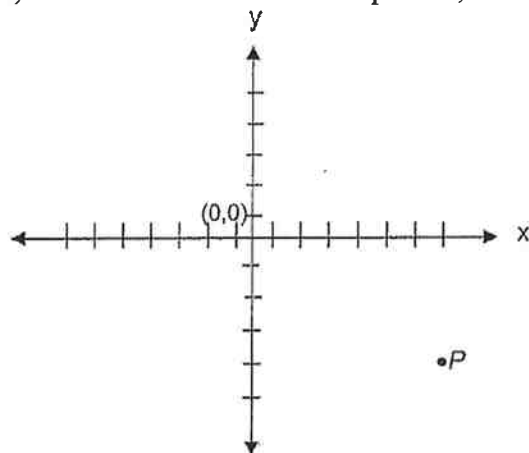
- 15) On the number line below, which letter best locates  $\frac{5}{9}$ ?



- 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)  $8x^8$

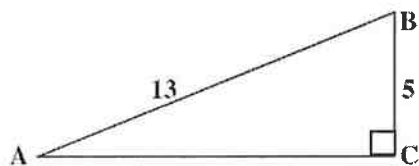
b)  $8x^4$

c)  $16x^4$

d)  $32x^8$

**Topic VIII – Geometry**

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



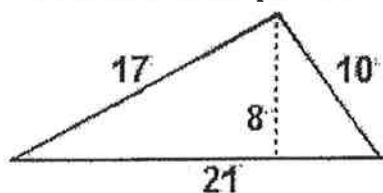
a)  $\sqrt{194}$

b) 12

c)  $\sqrt{18}$

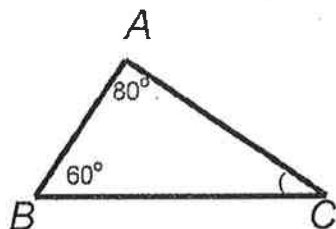
d) 8

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



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

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



- A.  $40^\circ$    B.  $50^\circ$    C.  $60^\circ$    D.  $10^\circ$

#### 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 Inequality 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

[illegible]