

MDTP Elementary Algebra Diagnostic Sample Test

Calculators are not allowed for the test.

1. $\sqrt{0.49} - \frac{7}{4} =$
 (A) 6.75 (B) 5.25 (C) 1.05 (D) -1.05 (E) -1.68

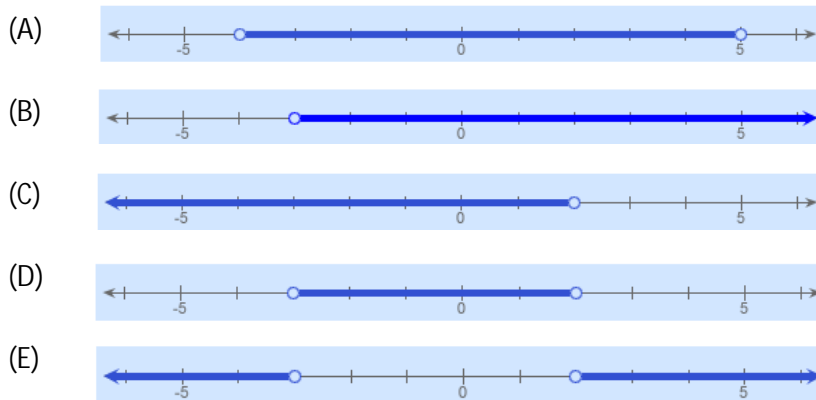
2. $\begin{cases} 2x - y = 6 \\ 5x + 3y = 15 \end{cases}$, then $y =$
 (A) -21 (B) -9 (C) 0 (D) 3 (E) 9

3. One of the factors of $x^2 - 2x - 24$ is
 (A) $x - 6$ (B) $x - 2$ (C) $x + 8$ (D) $x + 3$ (E) $x - 24$

4. $\frac{3}{10} - \frac{5}{6} =$
 (A) -32 (B) $-\frac{2}{4}$ (C) $-\frac{1}{2}$ (D) $-\frac{32}{60}$ (E) $-\frac{8}{15}$

5. $\sqrt{3} \cdot \sqrt{6} - \sqrt{50} =$
 (A) $-\sqrt{32}$ (B) $-4\sqrt{2}$ (C) $-2\sqrt{2}$ (D) $2\sqrt{2}$ (E) $4\sqrt{2}$

6. Which of the following graphs best represents all values of x such that $-2x < 6$ and $x - 2 < 0$?



7. $(2y - 5x)^2 =$
 (A) $4y^2 - 10xy + 25x^2$ (B) $4y^2 - 10xy - 25x^2$ (C) $4y^2 - 20xy + 25x^2$
 (D) $4y^2 + 25x^2$ (E) $4y^2 - 25x^2$

8. $\frac{5^8}{5^4} =$

(A) $\frac{1}{5^4}$ (B) $\frac{1}{5^2}$ (C) 2 (D) 5^4 (E) 5^2

9. If the sum of three consecutive odd integers is 39, what is the largest of these odd integers?
- (A) 11 (B) 12 (C) 13 (D) 14 (E) 15
-

10. If $x - \frac{3}{5}x = 12$, then $x =$

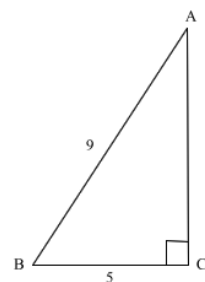
(A) -20 (B) $-\frac{36}{5}$ (C) -6 (D) 6 (E) 30

11. $\frac{x^2 - 5x}{x^2 - 25} =$

(A) $\frac{x}{x+5}$ (B) $\frac{x}{5}$ (C) $\frac{x}{x-5}$ (D) $\frac{5-x}{-25}$ (E) $\frac{x^2-1}{x-5}$

12. In the right triangle ABC shown to the right, what is the length of AC?

- (A) 3 (B) 4 (C) 7 (D) $\sqrt{106}$ (E) $2\sqrt{14}$



-
13. One of the solutions of the equation $x^2 - 2x = 15$ is
- (A) -15 (B) -1 (C) 3 (D) 5 (E) 15
-

14. If the length of a rectangle is 5 inches less than twice its width and the perimeter of the rectangle is 32 inches, what is the length, in inches, of the rectangle?

- (A) 7 (B) 9 (C) $\frac{37}{2}$ (D) $\frac{37}{3}$ (E) 27
-

15. $\frac{3}{w} + \frac{w}{w+1} =$

(A) $\frac{3}{w+1}$ (B) $\frac{3w}{2w+1}$ (C) $\frac{w^2+3w+3}{2w+1}$ (D) $\frac{w^2+3w+3}{w^2+w}$ (E) $\frac{w^2+6w}{w^2+w}$

KEY- MDTP Elementary Algebra Diagnostic Sample Test

Question	Correct Answer	Topic
1	D	ARTH
2	C	LINR
3	A	POLY
4	E	ARTH
5	C	EXPS
6	D	GRPH
7	C	POLY
8	D	EXPS
9	E	WORD
10	E	LINR
11	A	RATL
12	E	GEOM
13	D	QUAD
14	B	WORD
15	D	RATL

ARTH	Arithmetic Operations
EXPS	Exponents and Square Roots
GEOM	Geometric Measurement
GRPH	Graphing
LINR	Linear Equations and Inequalities
POLY	Polynomials
QUAD	Quadratic Equations
RATL	Rational Expressions
WORD	Word Problems