The Learning Centre

Basic Algebra Pro ciency Practice Test

This practice test contains 13 questions. The actual test contains 25 questions.
The use of a calculator is not permitted.

Topics for this test include: factoring, rational expressions, inequalities, systems of equations, word problems, exponents, radicals, ratios and proportions, graphs of linear functions.

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1. $\dfrac{2x}{x^2-25} - \dfrac{1}{x+5} =$

   A. $\dfrac{2x-1}{x^2-25}$ B. $\dfrac{1}{x+5}$ C. $\dfrac{1}{x-5}$ D. $x+5$ E. $\dfrac{2x-1}{x^2-x-20}$

2. $\dfrac{a}{a+\dfrac{3}{b}} =$

   A. $\dfrac{b}{b+3}$ B. $\dfrac{b+3}{b}$ C. $\dfrac{b}{3}$ D. $\dfrac{ab}{ab+3}$ E. $\dfrac{ab}{a+3}$

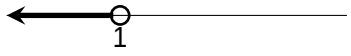
3. $\dfrac{10}{\sqrt{15x}}$

   A. $\dfrac{\sqrt{6x}}{3x}$ B. $\dfrac{2\sqrt{3x}}{3x}$ C. $\dfrac{2\sqrt{15x}}{3x}$ D. $\dfrac{\sqrt{3x}}{2}$ E. $\dfrac{\sqrt{15x}}{10}$

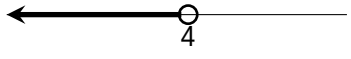
4. $\sqrt{9x} + 5\sqrt{x} =$

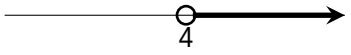
   A. $\sqrt{14x}$ B. $5\sqrt{10x}$ C. $\sqrt{34x}$ D. $8\sqrt{x}$ E. $6\sqrt{10x}$

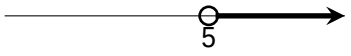
5. Of the following graphs, which best represents the solution of the inequality $2x + 3 < 5$?

   A. 

   B. 

   C. 

   D. 

   E. 

6. If $\dfrac{1}{x} + 5 = \dfrac{x-4}{x}$, then $x =$

   A. 10 B. $-\dfrac{1}{8}$ C. $-\dfrac{1}{2}$ D. $-\dfrac{3}{4}$ E. $-\dfrac{5}{4}$

7. The $x-$coordinate of the solution to the system of equations $\begin{cases} 4x + 3y = 9 \\ 4x - 3y = 7 \end{cases}$ is:

   A. $x = 16$ B. $x = 4$ C. $x = 2$ D. $x = \dfrac{1}{3}$ E. $x = \dfrac{1}{4}$

8. $\dfrac{x^2 - 16}{x^2 - 8x + 16} =$

   A. $\dfrac{x + 4}{x - 4}$ B. 0 C. $\dfrac{1}{8x}$ D. 1 E. $\dfrac{-16}{-8x + 16}$

9. A student has 42 coins worth a total of \$5.90. Each coin is either a nickel (ve cents) or a quarter (twenty- ve cents). If x is the number of nickels, then x can be determined from the equation

   A. $0{:}05x + 0{:}25(42 - x) = 5{:}90$

   B. $0{:}05 + 0{:}25(42 - x) = 5{:}90$

   C. $0{:}05x + 10{:}50 = 5{:}90$

   D. $42x = 5{:}90$

   E. $\dfrac{x}{0{:}05} + \dfrac{42 - x}{0{:}25} = 5{:}90$

10. One of the factors of $14x^2 + x - 3$ is

    A. $7x - 3$ B. $14x - 1$ C. $2x - 1$ D. $7x + 3$ E. $7x + 1$

11. $\sqrt{80a^8b^{12}}$

    A. $4a^4b^6$ B. $40a^4b^6$ C. $4a^6b^{10}\sqrt{5}$ D. $4a^4b^6\sqrt{5}$ E. $40a^8b^{12}$

12. In a certain company, 240 of the employees are men. What is the total number of employees if 5 out of every 8 employees are men?

    A. 9600 B. 1920 C. 384 D. 150 E. 16

13. Which of the following points lies on the line $3x + 4y + 5 = 0$?

    A. $-4; \dfrac{11}{3}$ B. $-4; \dfrac{7}{4}$ C. $0; \dfrac{5}{4}$ D. $(4; -7)$ E. $4; \dfrac{17}{4}$

Answers:

1. C	2. D	3. C	4. D	5. A	6. E
7. C	8. A	9. A	10. A	11. D	12. C
13. B					