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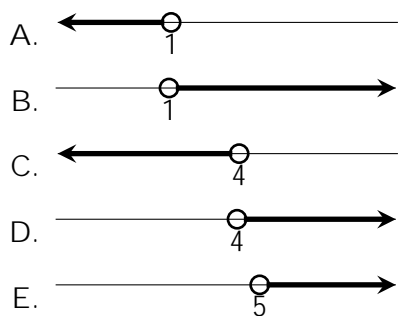   D. $\dfrac{ab}{ab+3}$
   E. $\dfrac{ab}{a+3}$

3. $\dfrac{\wp\overline{10}}{\wp\overline{15x}} =$

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

4. $\wp\overline{9x} + 5\wp\overline{x} =$

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

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

   A. 1

   B. 1

   C. 4

   D. 4

   E. 5

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 $\begin{pmatrix} 4x + 3y = 9 \\ 4x \; 3y = 7 \end{pmatrix}$ is:

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

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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 (ﬁve cents) or a quarter (twenty-ﬁve 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. $\sqrt{80a^8 b^{12}}$

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

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

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					