Elementary Algebra Review - Answers

Add or Subtract the following expressions and then simplify.

1) $\frac{x+5}{x-4}+\frac{x+6}{x-4}$

a. $\frac{2x^2+11}{x-4}$ b. $\frac{x+11}{x-4}$ [✓ c. $\frac{2x+11}{x-4}$] d. $\frac{x^2+11}{x-4}$

2) $\frac{5}{x+5}-\frac{4}{x}$

a. $\frac{x+20}{x(x+5)}$ b. $\frac{x-5}{x(x+5)}$ c. $\frac{1}{x(x+5)}$ [✓ d. $\frac{x-20}{x(x+5)}$]

3) $\frac{x+9}{xy}+\frac{x-1}{x^2y}$

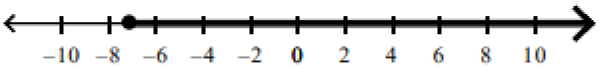
a. $\frac{x^2+10x+1}{x^2y}$ [✓ b. $\frac{x^2+10x-1}{x^2y}$] c. $\frac{x^2-10x-1}{x^2y}$ d. $\frac{x^2+9x-1}{x^2y}$

Practice Placement Test

1) Solve and graph. Answer is D.

$3t - 12 \le -9$

A. $t \ge -7$



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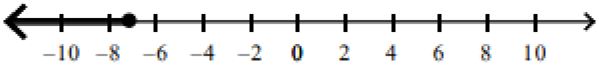
B. $t \le -7$



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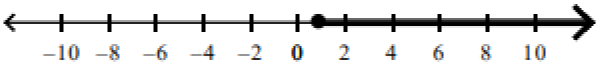
C. $t \ge 1$



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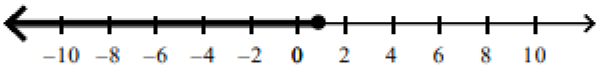
D. $t \le 1$



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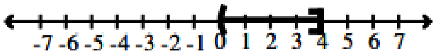
2) Express the following in interval notation: Answer is D.



-7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7

A) [0, 4) B) (0, 4) C) [0, 4] D) (0, 4]

3) Solve and write the answer in interval notation:

$-2(5y - 11) < -12y + 18$

A) (-2, ∞) B) (-∞, -2) C) (-12, ∞) D) (-∞, -12)

4) Simplify the expression: $\frac{1}{2}(12x + 6) - \frac{2}{3}(6x + 9)$

a. 2x – 3 b. 2x + 9 c. 10x – 3 d. 10x + 9

5) Solve the following equation $2(9x-6) = 11(2x)$

a. 1 b. -1 c. -3 d. 3

6) Solve the following equation $\sqrt{8y+4} = 6$

a. 2 b. 3 [✓ c. 4] d. 6

7) Solve the following equation $\frac{4p-24}{3} = p - 7$

a. 12 [✓ b. 3] c. 7 d. 10

8) Solve the following equation $\frac{2t+2}{3} = \frac{-8}{2}$

[✓ a. -7] b. -8 c. -6 d. -9

9) The width of a rectangle is 4 inches longer than its length. If the perimeter of the rectangle is 28 inches, what is the length of the shorter side.

a. 7 b. 8 [✓ c. 5] d. 12

10) Solve y = 4px - k solve for x

[✓ a) x = $\frac{y+k}{4p}$] b) x = $\frac{y-k}{4p}$ c) x = $\frac{4p+k}{y}$ d) x = $\frac{y-4p}{k}$

11) What is the value of 4^2 - $\frac{12}{3}$ + (7 – 6) ?

a. 1 b. 5 c. 12 [✓ d. 13]

12) Evaluate $\frac{5K^2 - T}{Y+2}$ if Y = -1, T = 3, and K = - 2

a. 7 [✓ b. 17] c. -23 d. -11

13) Multiply the binomials: (x - 10)(3x - 5). What is the value of the x-coefficient?

a. -25 b. -50 [✓ c. -35] d. - 4

14) Square the binomial: $2(x+2)^2$ What is the coefficient of the x-term?

a. 2 b. 4 c. 6 d. 8

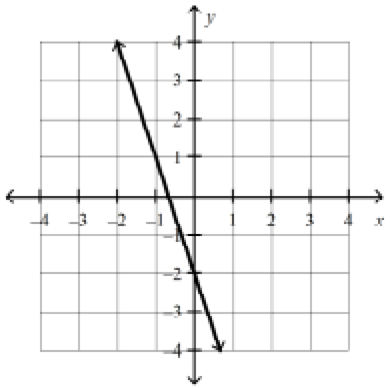
15) Simplify: $\frac{R^{-5}R^{6}}{R^{-7}} = R^{N}$ What is the value of N?

a. 5 b. 13 c. 8 d. 6

16) Simplify: $\frac{2(2^{k}) + 2^{k+3}}{2} = N(2^{K})$ What is the value of N?

a. 6 b. 5 c. 4 d. 3

17) What is the equation of this line?



a. $y = -3x - 2$ b. $y = 3x + 2$

c. $y = -1/3\,x + 2$ d. $y = 1/3\,x - 2$

18) Which is a factor of $x^2 + 10x + 24$?

A) x - 4 B) x + 4 C) x + 8 D) x - 6

19) Which is a factor of $x^2 - 2x - 35$?

A) x - 5 B) x + 7 C) x - 7 D) x + 1

20) Factor the difference of two squares: $x^2 - 25$

A) (x + 5)(x – 5) B) (x – 5)(x – 5) C) (x + 1)(x – 25) D) (x + 25)(x – 1)