Review for Intermediate Algebra Test #1

Answer Key

Questions 1 through 4 refer to the following:

Simplify the given expression:

1) $(3x^2 - 5x + 9) + (7x^2 + 8x - 15)$

A) $10x^2 - 3x + 6$
C) $10x^2 + 3x + 6$
B) $10x^2 + 3x - 6$
D) $10x^2 - 3x - 6$

2) $(18p^4q - 12p^3q^2r) \div (6p^2q)$

A) $2p^2 - 3pqr$
C) $3p^2q - 2p^2qr$
B) $3pq - 2pq^2$
D) $3p^2 - 2pqr$

3) $(a - 4b) - (9a + 2b)$

A) $-8a - 2b$
C) $-10(a + b)$
B) $-8a - 6b$
D) $-14(a - b)$

4) $4(3x - 2) + 7(3 - 2x)$

A) $2x + 13$
C) $-2x + 13$
B) $-2x - 13$
D) $2x - 13$

5) What is $8y^2 + 4y - 3$ subtracted from $5y^2 + 2y - 1$?

A) $-3y^2 - 2y + 2$
C) $3y^2 - 2y + 2$
B) $-3y^2 + 2y - 2$
D) $3y^2 + 2y - 2$

6) Find the product of the given expression:

$-5b^2(2b - 4b^2)$

A) $-10b + 20b^2$
C) $-10b^3 + 20b^4$
B) $-10b^3 - 20b^4$
D) $-10b^2 - 20b^2$

Questions 7 through 9 refer to the following:

Expand and simplify the given polynomials:

7) $(5y - 2)(y - 4)$

$5y^2 - 22y + 8$

8) $(3x + y)^2 \rightarrow (3x + y)(3x + y)$ expand

$9x^2 + 6xy + y^2$

9) $(x + 9)(x - 2) - x^2$

$7x - 18$

10) Which binomial is equivalent to $3(x - 1) - 2(x - 3)$?

A) $x - 7$
C) $x + 3$
B) $x + 5$
D) $5x - 7$

11) Find the quotient of the given expression:

$$\frac{12x^4 - 20x^2 + 8x}{4x}$$

A) $3x^4 - 5x^2 + 4x$
C) $3x - 5x^{\frac{1}{2}} + 2x^{\frac{1}{4}}$
B) $3x^3 - 5x + 2$
D) $3x^4 - 5x^2 + 2x$

12) What is the solution for x given the equation $3x - 31 = -76$.

A) -15
C) 15
B) $\frac{107}{3}$
D) $-\frac{107}{3}$

13) What is the solution for x given the equation $\frac{4}{5}x + 23 = -25$?

A) -75
C) 75
B) -60
D) 60

14) What is the value of x in the equation $x + \frac{3}{4} = \frac{4}{5}$?

A) $-\frac{1}{9}$
C) $\frac{7}{20}$
B) $\frac{1}{20}$
D) $\frac{1}{9}$

Questions 15 through 19 refer to the following:

Solve the given equation for the variable:

15) $16 = 8 - 4y$

A) 6
B) -4
C) -2
D) -6

16) $\frac{x}{24} = \frac{3}{8}$

A) $\frac{3}{32}$
C) 6
B) 9
D) 1

17) $7y - 35 = 2y$

A) -5
B) 5
C) -7
D) 7

18) $2x + 20 = 52 - 6x$

A) 18
C) 4
B) 9
D) -4

19) $5 - 3(d + 2) = 2(d + 1) - 2d$

A) 1
C) -1
B) $-\frac{2}{3}$
D) $-\frac{5}{3}$

20) What is the solution for n given the equation $4n + 32 = 8n - n + 14$?

$n = 6$

21) Determine the solution for x in the equation $0.8x + 3.2 = 0.4x$.

$x = -8$

22) What is the value of n in the equation $0.6(n + 10) = 3.6$?

A) 4
C) 5
B) -4
D) -0.4

23) Use the distributive property to solve for z in the equation $14 = 15z - (2z + 12)$.

$2 = 2$

24) **What is the value of x in the proportion $\frac{x+8}{15} = \frac{x}{5}$?**

cross multiply

$5(x+8) = 15x$

$5x + 40 = 15x$

$40 = 10x$

$4 = x$

25) Solve $\frac{2y+3}{2} = \frac{4y-1}{5}$

$y = -\frac{17}{2}$ or -8.5

26) Solve $\frac{3x}{2} = \frac{18}{6}$

$x = 2$

27) **If 10 apples cost 25 cents, how much would 22 apples cost?**

$\frac{10}{.25} = \frac{22}{x}$ $\quad x = .55$

28) **7 out of 12 students surveyed enjoyed playing basketball. If 696 students are surveyed, how many would you expect to say they enjoy playing basketball?**

$\frac{7}{12} = \frac{x}{696}$

A) 399
C) 198
B) 290
D) 406

29) What is the solution to the inequality $8 - x < 23$?

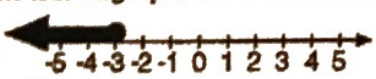
A) $x < -15$
B) $x > -15$
C) $x > 31$
D) $x < 31$

30) Solve the given inequality for the domain of the set of real numbers:

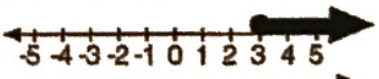
$5x - 18 > 2(4x - 15)$

A) $x > 4$
B) $x < 4$
C) $x < -4$
D) $x > -4$

31) Which of the following represents the solution set and graph for the inequality $2x - 7 + 3x > 8$?

A) $x < -3$, 

B) $x < 3$, 

C) $x > 3$, 

D) $x > -3$, 

Solve the following inequalities:

32) $5 - (6 - x) < 3$

$x < 4$

33) $(4x - 8) + (2x + 7) > x + 4$

$x > 1$

34) **Julio's wages vary directly as the number of hours that he works. If his wages for 5 hours are $29.75, how much will he earn for 30 hours? [*Show all work.*]**

$\frac{5}{29.75} = \frac{30}{x}$ $\quad x = \$178.50$