Practice WCSU Placement Test – Version C

1. Simplify $7\left(\dfrac{1}{7}x - \dfrac{2}{21}\right)$.

a) $\dfrac{1}{7}x - \dfrac{14}{3}$ b) $x - \dfrac{2}{3}$ c) $\dfrac{1}{7}x - \dfrac{2}{3}$ d) $x - \dfrac{14}{21}$

2. $7 - 3(2x - 5) =$

a) -6x +22   b) 6x – 20   c) -6x +35   d) 6x – 5

3. Find the number with the least value

a) $-\dfrac{2}{3}$ b) 0   c) -2   d) $\dfrac{3}{5}$

4. Jack drove y miles in 20 minutes. If he continues at the same rate how many miles can he drive in the next 15 minutes?

a) 35 miles   b) $\dfrac{4y}{3}$ miles   c) 5 miles   d) $\dfrac{3y}{4}$ miles

5. $\dfrac{x}{\dfrac{2}{x} + \dfrac{3}{y}} =$

a) $\dfrac{xy}{2y+3}$ b) $\dfrac{x}{5}$ c) $\dfrac{x^2 y}{2y+3x}$ d) $\dfrac{2y+3}{y}$

6. $32ab - 15j + 14a - 30j - 44ab =$

a) $-43a^2 bj$ b) -12ab –14a + 45j   c) 12ab + 14a – 45j   d) -12ab + 14a – 45j

7. The sum of three numbers is 225. One of them is x. What is the sum of the other 2 numbers?

a) 225   b) 225-x   c) 225+x   d) 75

8. $\dfrac{6}{x-2} - \dfrac{5}{x+3} =$

a) $\dfrac{14}{x+3}$ 　　　　 b) $\dfrac{x+28}{(x-2)(x+3)}$ 　　　 c) $\dfrac{-5}{2x}$ 　　　　 d) $\dfrac{x+8}{(x-2)(x+3)}$

9. $\dfrac{2x^2}{4x^5+x^3} =$

a) $\dfrac{1}{2x^6}$ 　　　　 b) $\dfrac{1}{2x^3+x}$ 　　　 c) $\dfrac{2}{4x^3+x}$ 　　　 d) $\dfrac{x^2}{2x^5+x^3}$

10. $\dfrac{3}{r} + \dfrac{2}{7r} =$

a) $\dfrac{5}{8r}$ 　　　　 b) $\dfrac{21}{2}$ 　　　 c) $\dfrac{23}{7r}$ 　　　 d) $\dfrac{5}{7r^2}$

11. If $\dfrac{9-r}{r} = 8$, **then r =**

a) 4 　　　　 b) 17 　　　 c) 1 　　　 d) 0

12. Kathy bicycles 6 km/h faster than Carlos. In the time it takes Carlos to bicycle 36 km, Kathy can bicycle 54km. How fast does Carlos travel?

a) 12 km/h 　　　　 b) 3 km/h 　　　 c) 18 km/h 　　　 d) 15km/h

13. Find the value of $|12-15|$

a) -15 　　　　 b) 12 　　　 c) -3 　　　 d) 3

14. $\left(-\dfrac{3}{4}\right)^3 =$

a) $\dfrac{9}{12}$ 　　　　 b) $\dfrac{27}{64}$ 　　　 c) $-\dfrac{3}{4}$ 　　　 d) $-\dfrac{27}{64}$

15. Which answer is the least?

    a) $5 \times 6 - 3$ b) $5 - 6 \times 3$ c) $5 + 6 \times 3$ d) $5 \times 6 + 3$

16. $6 + \dfrac{-3}{-5} =$

    a) $6\dfrac{3}{5}$ b) $5\dfrac{2}{5}$ c) $-\dfrac{3}{5}$ d) $-6\dfrac{3}{5}$

17. In the solution of the system of equations below, what is the value of s?
$$\begin{cases} 3r + 2s = 17 \\ 2r - s = 2 \end{cases}$$

    a) 4   b) $\dfrac{2}{17}$ c) -1   d) 2

18. $\sqrt[3]{-64x^6 y^7}$
    a) $4x^2 y^2 \sqrt[3]{y}$ b) $8x^3 y^4$ c) $-4x^2 y^2 \sqrt[3]{y}$ d) $4ix^2 y^2 \sqrt[3]{y}$

19. 'Twice a number is greater than four' can be written equivalently as:

    a) $x = 2$ b) $x > 8$ c) $x > 2$ d) $x > 4$

20. $36a^2 - 6a =$
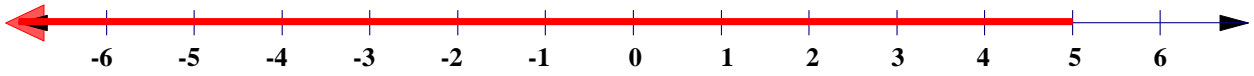
    a) $6a(4a - 6)$ b) $(6a - 1)(6a + 1)$ c) $6a$ d) $6a(6a - 1)$
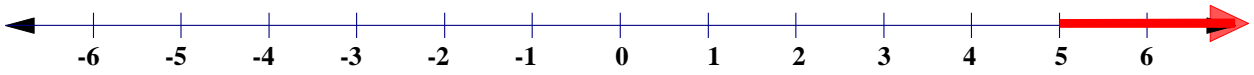
21. $3x + a \quad bx - 5 =$
    a) $3bx^2 + (ab - 2)x - 5a$
    b) $3bx^2 + (3b - 5a)x - 5a$
    c) $3bx^2 + (ab - 15)x - 5a$
    d) $3bx^2 + (ab - 8)x - 5a$

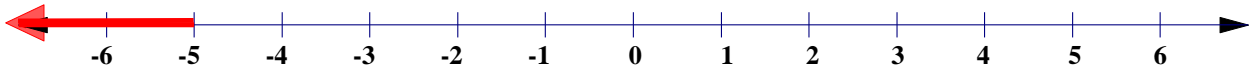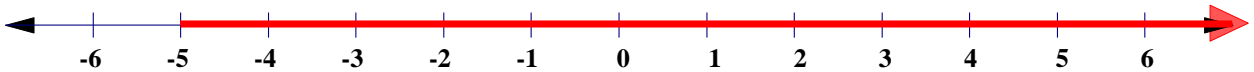**22.** Which of the following is the graph of $2x + 3 \leq -7$?

a)

b)

c)

d)

23. Factor completely: $x^2 - 49$

a) $x - 7^{\,2}$ b) $(x - 7)(x - 7)$ c) $(x - 7)(x + 7)$ d) $x - 7$

24. If $x - 3$ is less than 7 then $x + 3$ must be

a) 10   b) between 4 and 10   c) greater than 0   d) less than 13

25. Solve the following quadratic equation: $x^2 + 8x - 20 = 0$

a) $x = -2$ and $x = 10$ b) $x = 10$ c) $x = 2$ and $x = -10$ d) $x = x = \dfrac{5}{2}$

26. $\left(\dfrac{8x^4}{10y^5} \right) \cdot \left(\dfrac{5y^3}{4x^2} \right) =$

a) $\dfrac{x}{y}$ b) $\dfrac{16x^6}{25y^8}$ c) $\dfrac{x^2}{y^2}$ d) $\dfrac{13x^2}{14y^2}$
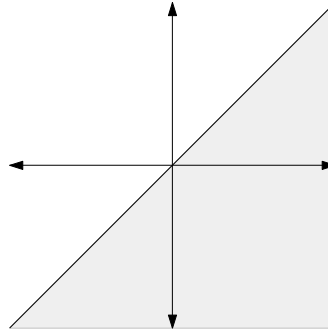
27. $\left(4b - \dfrac{1}{5}\right)^2 =$

a) $16b^2 + \dfrac{1}{25}$ 　　　　b) $8b^2 + \dfrac{2}{5}$ 　　　　c) $16b^2 - \dfrac{8}{5}b + \dfrac{1}{25}$ 　　　d) $16b^2 - \dfrac{4}{5}b + \dfrac{1}{25}$

28. Which of the following inequalities defines the region above?

a) $x \le 0$ and $y \le 0$ 　　　b) $x \ge y$ 　　　　c) $x \le y$ 　　　　d) $x \ge 0$ and $y \ge 0$

29. The inequality $x + 5 \le 19$ is equivalent to

a) $x \le 19$ 　　　　b) $x \ge 14$ 　　　　c) $x \le 24$ 　　　　d) $x \le 14$

30. The inequality $2x - 7 \ge x + 9$ is equivalent to

a) $x \ge 16$ 　　　　b) $-7 \le x \le 9$ 　　　c) $x \ge 16$ 　　　　d) $x \le -16$

31. Factor the following trinomial: $3x^2 + 4x - 15$

a) $(3x - 5)(x + 3)$ 　　b) $(3x + 5)(x - 3)$ 　　c) $(x - 5)(x - 3)$ 　　d) $(3x - 1)(x + 15)$

32. Which is a factor of $4x^2 + 37x + 9$?

a) $(2x + 9)$ 　　　　b) $(4x + 1)$ 　　　　c) $(2x + 3)$ 　　　　d) $(4x + 3)$

33. If x = -3 then $x^2 - 6x + 7 =$

a) 16 　　　　b) -20 　　　　c) 20 　　　　d) 34

34. $\dfrac{c^5}{c^8} =$

a) c^3

b) $\dfrac{1}{c^3}$

c) c^{13}

d) $\dfrac{1}{c^{13}}$

35. $\left(\dfrac{x^5}{y^8}\right)^3 =$

a) $\dfrac{x^8}{y^{11}}$

b) $x^8 y^{11}$

c) $\dfrac{x^{15}}{y^{24}}$

d) $\dfrac{1}{xy^9}$