Math 115, Final Exam	Fall 2016	40 Questions, Two Hours
DO NOT WRITE ON EXAM	Version A	Test #: 118
Do All Work On Scratch Papers And Put Your Answers On Scantron		
Books, Notes, Graphing Calculators, Computers, And Phones Are Not Allowed		

1. Which of these expressions is not defined?

A) $\frac{7+(-7)}{5-2}$ B) $\frac{7-(-7)}{5-2}$ C) $\frac{5-2}{7+(-7)}$ D) $\frac{5-2}{7-(-7)}$

2. John paid \$2400; this is 75% of his car's price. How much is the total price?

A) \$1800 B) \$9900 C) \$4000 D) \$3200

3. Simplify: $48-40+8\times 5$

A) 5 B) 47 C) 320 D) 23

4. Simplify: $-2x+4(x+1)-10$

A) $6x-9$ B) $-2x-6$ C) $2x-6$ D) $2x-9$

5. If $f(x)=x^2+6$, **find** $f(-2)$

A) 4 B) 2 C) -2 D) 10

6. Let $x=-2, y=4$, **and** $z=-5$. **Evaluate** $\frac{x^2-z}{y}$

A) 2.25 B) 5 C) 0.25 D) -0.25

7. Solve: $3+5x=4(x+2)+6x$

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

8. Solve: $\frac{3}{2}x+\frac{15}{2}=15$

A) $x=5$ B) $x=\frac{25}{3}$ C) $x=15$ D) $x=-\frac{5}{2}$

9. Solve: $6-\frac{x}{2}>-10$

A) $x<8$ B) $x<32$ C) $x<2$ D) $x<-8$

10. A box contains 48 coins in quarters and nickels. The total value of the coins is \$9.60. Find the number of nickels in the box.

A) 6 nickels B) 24 nickels C) 36 nickels D) 12 nickels

11. The sum of three consecutive even integers is 198. Find the largest of these integers.

A) 202 B) 66 C) 68 D) Cannot be determined

12. An investment of $4000 is made at an interest rate of 5%. How much additional money must be invested at an interest rate of 4% so that the total interest from both investment is $280.

A) $7000 B) $2000 C) $3500 D) $4000

13. The measures of three angles in a triangle are $2x+7, x+3, 3x-4$. Find the value of x; round to the nearest tenth.

A) $x = 31$ B) $x = 29$ C) $x = 14.5$ D) $x = 58$

14. If a DVD is discounted from $20 down to $15, what is the percent of discount?

A) 5% B) 33% C) 25% D) 15%

15. Train A leaves a station traveling at 60 mph. Six hours later, train B leaves the same station traveling in the same direction at 75 mph. How long does it take for train B to catch up to train A?

A) 30 hours B) 24 hours C) 54 hours D) 48 hours

16. Choose the equation of the line that passes through (2,4) and has a slope of -2

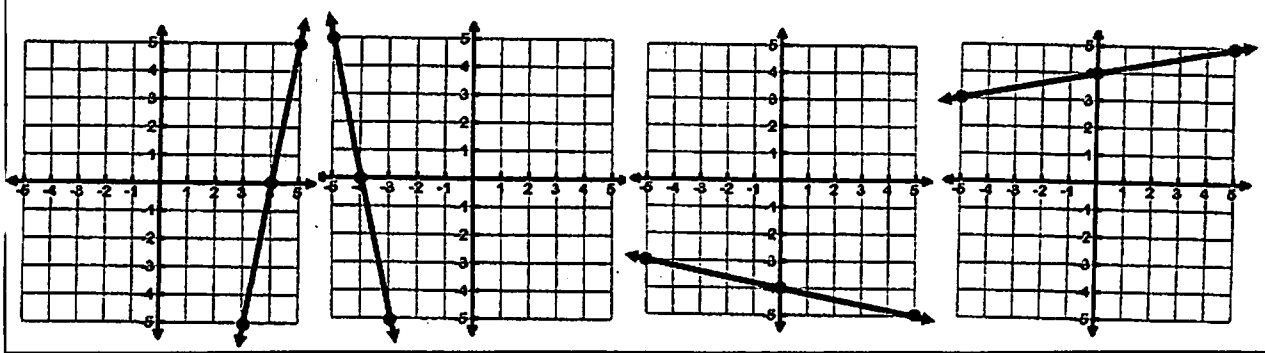
A) $y = -2x+10$ B) $y = -2x+8$ C) $y = -2x$ D) $y = -2x-8$

17. Which of the following lines would be parallel to $y = -4x+5$

A) $y = \frac{1}{4}x+2$ B) $y = -4x-2$ C) $y = -\frac{1}{4}x+5.5$ D) $y = 4x+6.5$

18. Graph the line: $x+5y = -20$

A) B) C) D)



19. Find the value of y of the solution to the system of equations.

$4x-3y=10$

$x+3y=10$

A) $y=2$ B) $y=-2$ C) $y=-\frac{10}{3}$ D) $y=4$

20. Find the value of x of the solution to the system of equations.

$y = x-3$

$y=2x$

A) $x=3$ B) $x=6$ C) $x=-6$ D) $x=-3$

21. The snack truck sells fruit by the piece. An order of 4 apples and 3 pears costs $3.10. An order of 6 apples and 1 pear costs $2.90. Find the cost of a pear.

A) $0.55 B) $0.60 C) $0.40 D) $0.50

22. Simplify: $\frac{x^3(x^2)^3}{(x^2)^4}$

A) x B) x^3 C) x^2 D) 1

23. $(2x-3)^2$ equals:

A) $4x^2-6x+9$ B) $4x^2-9$ C) $4x^2-12x+9$ D) $4x^2+9$

24. Divide: $(2x^2-x-3)\div(x-1)$

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

25. Factor completely: $25x^2-4y^2$

A) $(5x+2y)(5x-2y)$ B) $(5x-2y)(5x-2y)$ C) $(5x+2y)(5x+2y)$ D) $(5x-2y)(2x-5y)$

26. Factor completely: $x+3y+2x(x+3y)$

A) $(x+3y)(1+2x)$ B) $(x+3y)(2x-1)$ C) $2x(x+3y)$ D) $(x+3y)(x+1)$

27. Solve: $6x^2-13x=-6$

A) $x=-\frac{2}{3},x=-\frac{3}{2}$ B) $x=\frac{3}{4},x=-\frac{2}{3}$ C) $x=\frac{3}{2},x=\frac{2}{3}$ D) $x=\frac{3}{4},x=-\frac{1}{2}$

28. The length of a rectangle is 1 meter more than twice its width. The area of the rectangle is 36 square meters. Find the length of the rectangle.

A) 4 meters B) 9 meters C) 6 meters D) 13 meters

29. Simplify: $\frac{x^2-6x-16}{x^2-4}$

A) $\frac{x-8}{x-2}$ B) $\frac{x+8}{x+2}$ C) $\frac{x-8}{x+2}$ D) $\frac{x+8}{x-2}$

30. Simplify: $\frac{x-\frac{1}{x}}{1-\frac{1}{x^2}}$

A) 0 B) 1 C) $\frac{1}{x}$ D) x

31. Subtract: $\frac{1}{x+1}-\frac{1}{x}$

A) $\frac{-1}{x+1}$ B) $\frac{1}{x(x+1)}$ C) $\frac{-1}{x(x+1)}$ D) x

32. An engineer traveled 220 mi by car and then an additional 660 mi by plane. The rate of the plane is three times the rate of the car. The total trip took 8 hours. Find the rate of the car.

A) 50 mph B) 65 mph C) 55 mph D) 60 mph

33. Solve: $\frac{1}{x+2}+\frac{2}{x(x+2)}=1$

A) $x=2$ B) $x=2, x=-1$ C) $x=-2, x=1$ D) $x=1$

34. Solve for y: $xy+y=1$

A) $y=\frac{1}{x-1}$ B) $y=\frac{-1}{x-1}$ C) $y=\frac{1}{x+1}$ D) $y=\frac{-1}{x+1}$

35. Simplify: $\sqrt{18x^5y^4}$

A) $3x^2y^2\sqrt{2x}$ B) $2x^2y^2\sqrt{3x}$ C) $9x^2y^2\sqrt{x}$ D) $3x^5y^4\sqrt{2}$

36. Simplify: $\frac{\sqrt{40x^9}}{\sqrt{10x}}$

A) $5x^8$ B) $\sqrt{2}\,x^8$ C) $2x^8$ D) $2x^4$

37. Solve: $\sqrt{x+2}=x$

A) $x=2, x=-1$ B) $x=-2, x=1$ C) $x=2$ D) $x=-1$

38. Solve: $x^2-6x+4=0$.

A) $x=-6\pm\sqrt{5}$ B) $x=3\pm\sqrt{5}$ C) $x=-3\pm2\sqrt{5}$ D) $x=-3\pm\sqrt{5}$

39. Solve: $4(x+2)^2=28$

A) $x=-2\pm\sqrt{7}$ B) $x=2\pm\sqrt{7}$ C) $x=2\pm\frac{\sqrt{7}}{7}$ D) $x=-2\pm\frac{\sqrt{7}}{7}$

40. Find the x-intercepts: $y=x^2-5x+6$

A) $(6,0),(-1,0)$ B) $(-6,0),(1,0)$ C) $(2,0),(3,0)$ D) $(-2,0),(-3,0)$

THE END ☺