Los Angeles Southwest College
Mathematics Department
Math 115 – Common Final Exam *(Practice TEST (ans))*

1. Simplify: $-12-(-46)-8$ $\boxed{26}$

2. Decide whether the statement is true or false: $-|-12|<-|27|$ $\boxed{\textit{false}}$

3. For the following word phrase write an **expression** using x as the variable and **simplify**. "*Thirty subtracted from the difference between four times a number and sixteen*" $\boxed{4x-46}$

4. Evaluate: $2x^2y-8xy^2,\ if\ x=-2\ and\ y=3$ $\boxed{168}$

5. Combine like terms: $7y^2-5y-2y^2-4y+18$ $\boxed{5y^2-9y+18}$

6. Graph $-3\le x<8$ on a number line.

7. Find the **slope** of the line through $(-2,5)\ and\ (-4,-4)$ and write answers in the simplest form $\boxed{\frac{9}{2}}$

8. Multiply: $3y^2(4y^3-6y^2+7)$ $\boxed{12y^5-18y^4+21y^2}$

9. Factor: y^2-25 $\boxed{(y-5)(y+5)}$

10. Find the LCM of $18x^2y^4\ and\ 30x^5y^3$ $\boxed{2^1 3^2 5x^5y^4\ or\ 90x^5y^4}$

11. Simplify: $\dfrac{-5\cdot 2^2-3\cdot 6}{4\cdot 6-5}$ $\boxed{-2}$

12. Solve the equation: $5(x-2)-3(x-5)=11$ $\boxed{x=3}$

13. Solve the following word problem by drawing a picture, defining the variable(s), setting up the equation(s), and then solve. Don't forget to include units.
The length of a rectangle is two more than twice times the width.
If the perimeter is 34 inches, find the width and the length.

$\boxed{\textit{the width is } 5in \textit{ and the length is } 12in}$

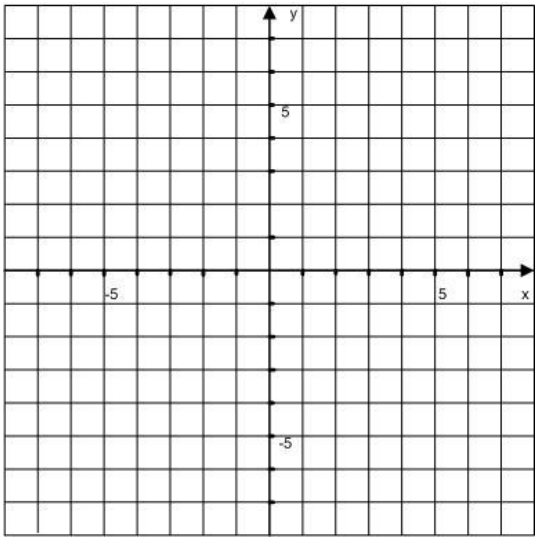
14. Subtract: $(7x^3+6x^2-11x+12)-(-4x^3+2x^2-7x-16)$ $\boxed{11x^3+4x^2-4x+28}$

15. Solve the formula $A=Q-Bt$ for t. $\boxed{t=\frac{A-Q}{-B} \textit{ or } t=-\frac{A-Q}{B} \textit{ or } t=\frac{Q-A}{B}}$

16. Write the equation of the line passing through the point $(-2,3)$ and having slope -4. Give the final answer in the slope - intercept form. $\boxed{y=-4x-5}$

17. Write the equation of the line passing through the pair of points $(-4,-6)$ *and* $(6,4)$. Give the final answer in the slope - intercept form. $\boxed{y=x-2}$

18. Graph the linear inequality $4x-3y\le 12$



19. (a) Solve the linear inequality, (b) graph the solution, and (c) write the solution set as interval notation:

$5(x-3)-2(x-4)\le -5$ $\boxed{x\le \frac{2}{3}}$

20. Solve the system of equations: $\begin{cases}3x-4y=-15\\4x+3y=5\end{cases}$ $\boxed{x=-1, y=3 \text{ or } (-1,3)}$

21. Simplify and write the answer using only positive exponents: $\frac{-35x^3y^3}{28x^{-2}y^7}$ $\boxed{\frac{-5x^5}{4y^4}}$

22. Multiply: $(2y-4)(2y^3+4y^2+2y-3)$ $\boxed{4y^4-12y^2-14y+12}$

23. Perform the indicated operation: $(3x-6y)^2$ $\boxed{9x^2-36xy+36y^2}$

24. Use the long division to perform the division: $\frac{2x^2+7x-5}{2x-3}$ $\boxed{x+5+\frac{10}{2x-3}}$

25. Solve by factoring: $5x^3-80x=0$ $\boxed{x=-4,0,4 \text{ or } \{-4,0,4\}}$

26. Solve by factoring: $2x^2+9x=5$ $\boxed{x=-5,\frac{1}{2} \text{ or } \left\{-5,\frac{1}{2}\right\}}$

27. Simplify into lowest terms: $\frac{x^2+x-12}{x^2-x-20}$ $\boxed{\frac{x-3}{x-5}}$

28. Multiply and simplify: $\frac{x^2-5x+6}{x^2+4x-32}\cdot\frac{x^2+x-20}{x^2+4x-21}$ $\boxed{\frac{(x-2)(x+5)}{(x+8)(x+7)}}$

29. Add. Write answer in lowest terms: $\frac{3}{x+1}+\frac{9}{x^2-2x-3}$ $\boxed{\frac{3x}{(x-3)(x+1)}}$

30. Solve and check for any extraneous solution: $\frac{x}{x-3}+\frac{4}{x+3}=\frac{18}{x^2-9}$ $\boxed{x=-10 \text{ or } \{-10\}}$

31. A 40% dye solution is to be mixed with a 70% dye solution to get 180 L of a 60% solution. How many liters of the 40% and 70% solutions will be needed?

$\boxed{60L \text{ of } 40\% \text{ dye solution and } 120L \text{ of } 70\% \text{ dye solution}}$

32. Multiply and simplify: $\sqrt{32x^5y}\cdot\sqrt{2xy^3}$ $\boxed{8x^3y^2}$

33. Solve: $x^2-7=-3$ $\boxed{x=\pm 2 \text{ or } \{-2,2\}}$

34. Solve and check each potential solution: $\sqrt{x+9}=5$ $\boxed{x=16 \text{ or } \{16\}}$

35. Use the quadratic formula to solve: $x^2-4x+1=0$ $\boxed{x=2\pm\sqrt{3} \text{ or } \{2-\sqrt{3},2+\sqrt{3}\}}$

36. (a) Find the x-intercept = (,), (b) and the y–intercept = (,) of the equation $-4x+5y=20$.
(c) Graph the equation using the intercepts.

Given $-4x+5y=20$ HINT: **use a T-Bar to organize your intercepts.**

(a) Find the x-intercept and give answer as an ordered pair;

(b) Find the y-intercept and give answer as an ordered pair;

(c) Graph the linear equation using answers from parts a & b