Name_____ Math 28 Final Review

1. Evaluate $f(-3)$ given $f(x) = -2x^2 - 4x + 3$

2. Factor Completely
   a. $48x^6 - 75x^2y^6$

   b. $ab + 7b - 8a - 56$

3. Factor completely $4x^2 - 4x - 15$

4. Solve the quadratic equation by factoring: $2x^2 - 7x + 5 = 0$

5. Solve the quadratic equation by completing the square: $x^2 - 8x = 9$.

6. Solve the quadratic equation by any method of your choice and express the solution in simplest radical form:

$$2x^2 - 4 = 3x.$$

7. Simplify $\dfrac{a^2 - 3a}{5a} \cdot \dfrac{20a^2}{3a - 9}$

8. Simplify

$$\frac{2x}{x^2 - 9x + 20} + \frac{8}{x - 4}$$

9. Simplify

$$\frac{x^2 - 3x}{x^2 - 5x + 6} \div \frac{x^2 + 7x + 10}{x^2 - 4}$$

10. Simplify

$$\frac{1 - \dfrac{2}{x - 1}}{x + \dfrac{3}{x - 4}}$$

11. Solve $\dfrac{x}{x-5} = \dfrac{3x}{x^2-7x+10} + \dfrac{8}{x-2}$

12 a. Simplify $5\sqrt{63} + 2\sqrt{28} + 4\sqrt{27}$

b. Simplify $(4-\sqrt{5})^2$

13. Express as a fraction in lowest terms $16^{-\frac{3}{4}}$

14. Simplify

$$\left(\frac{81x^{13}y^{-3}}{xy^{-11}}\right)^{\frac{1}{4}}$$

15. Rationalize the denominator of

$$\frac{6}{3+\sqrt{2}}$$

16. Rationalize the denominator

$$\frac{\sqrt{2x}-2\sqrt{3y}}{\sqrt{3y}}$$

17. Solve $\sqrt{x^2-4}+3=x$

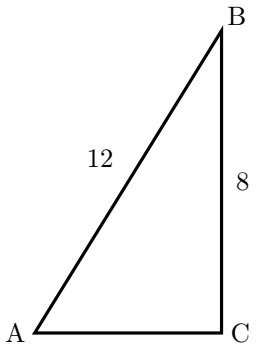
18. Perform the indicated operation $(5-3i)(2+2i)-(3-4i)$

19. ΔABC is a right triangle with $C=90°$. Find

$\tan A$

$\cos B$

$\sin A$



20. In ΔABC where $C=90°$ if $\sin A=\frac{3}{5}$ and $a=9$, find b.