

SM3-A HW #5-5 (practice)

Period _____

Simplify each expression.

1) $\frac{a-5b}{25ab^2} - \frac{a+6b}{25ab^2}$

2) $\frac{4}{3} - \frac{x+3}{3x(x+4)}$

3) $\frac{1}{x+3} \cdot \frac{x^2+2x-3}{x-4}$

4) $\frac{3(n-3)}{(n+4)(n-3)} \div \frac{n-5}{(n+4)(n-5)}$

Identify the domain and range of each.

5) $y = -3\sqrt{x+3} - 4$

Find all zeros of the "quadratic form" equation below

6) $f(x) = x^4 - x^2 - 42$

- 7) a) Rewrite as a Reciprocal function
 b) Identify the "excluded values of x" (which are x-values NOT in the domain)
 c) Identify the vertical asymptote of the graph.
 d) Identify the x-intercept.
 e) identify the horizontal asymptote
 f) Identify the y-intercept.

$$f(x) = \frac{x-3}{x+1}$$

- 8) Mike wants to make a 23% saline solution. He has already poured 9 L of a 35% saline solution into a beaker. How many L of a 5% saline solution must he add to this to create the desired mixture?
- 9) How many oz. of mixed nuts that contain 20% peanuts must Mike add to 10 oz. of mixed nuts that contain 60% peanuts to make a mixture with 36% peanuts?
- 10) A metal alloy weighing 10 oz. and containing 77% copper is melted and mixed with 3 oz. of a different alloy which contains 38% copper. What percent of the resulting alloy is copper?

Solve each question. Round your answer to the nearest hundredth.

- 11) It takes Bill ten hours to pick forty bushels of apples. Matt can pick the same amount in 15 hours. If they worked together how long would it take them?
- 12) Ted can pick forty bushels of apples in 8 hours. One day his friend Jenny helped him and it only took 5.09 hours. How long would it take Jenny to do it alone?

- 13) Brenda can tar a roof in 15 hours. One day her friend Paul helped her and it only took 5.22 hours. How long would it take Paul to do it alone?

Solve each equation. Remember to check for extraneous solutions.

14) $\frac{1}{3n} = \frac{1}{n} + \frac{1}{3}$

15) $\frac{1}{k^2 - 6k} = \frac{5k^2 - 5}{k^2 - 6k} - \frac{1}{k}$

16) $\sqrt{m+1} = \sqrt{2m-3}$

17) $-6 = -2\sqrt{-3-3k}$