Math 90 Chapter 7 Practice Problems   Name _____
(7.1, 7.2, 7.3, 7.6 and 7.7)

List all numbers for which each expression is undefined.

1) $\dfrac{x-7}{8x}$ 2) $\dfrac{4}{x+6}$ 3) $\dfrac{x+2}{x^2-9}$ 4) $\dfrac{x^2+4x+3}{x^2+8x-20}$

Simplify

5) $\dfrac{2x^2-x-3}{x^2+6x+5}$

Multiple or divide and, if possible, simplify.

6) $\dfrac{15t^3}{t^2+3t-54}\cdot\dfrac{t^2-81}{12t}$ 7) $\dfrac{4w^2-9}{3w^2-24w}\div\dfrac{2w^2+13w+15}{w^2-w-56}$

8) $\dfrac{5a^2}{25a^2-1}\div\dfrac{5a^2-1}{25a^2+15a-4}$ 9) $\left(x^2+8x+16\right)\cdot\dfrac{(x-4)^2}{x^2-16}$

Add or subtract and, if possible, simplify.

10) $\dfrac{4x+1}{x^2}+\dfrac{3x-2}{x^2}$ 11) $\dfrac{5-t}{t^2+4}-\dfrac{t-9}{t^2+4}$

Solve each equation

12) $\dfrac{x-4}{x+3}=\dfrac{4}{7}$ 13) $\dfrac{x-1}{x-7}=\dfrac{x-4}{x+4}$ 14) $\dfrac{x-5}{x-7}=\dfrac{2}{x-7}$ 15) $\dfrac{w}{50}=\dfrac{2}{w}$

Explain what your variable represents, write an proportion equation and solve with algebra.
16)   Half a cup of trail mix cereal has 180 calories.
      How much trail mix cereal would have 100 calories?
17)   If a hybrid car travels about 188 miles on 4 gal of gas.
      How much gas is needed for 752 miles?
18)   The Fish and Game Department went to a forest caught, tagged and released 42 deer.
      Later that year, they went back and spotted 25 deer. Out of those 25 deer 6 of had tags.
      Use a proportion to determine how many deer are in that forest

Answers

1. 0
2. –6
3. –3, 3
4. –10, 2
5. $\dfrac{2x-3}{x+5}$
6. $\dfrac{5t^2(t-9)}{4(t-6)}$
7. $\dfrac{(2w-3)(w+7)}{3w(w+5)}$
8. $\dfrac{5a^2(5a+4)}{(5a+1)(5a^2-1)}$
9. $(x+4)(x-4)$
10. $\dfrac{7x-1}{x^2}$
11. $\dfrac{-2(t-7)}{t^2+4}$
12. x = 40/3
13. x = 16/7
14. No solution
15. w = 10 or -10
16. 5/18 cup
17. 16 gallons of gas
18. 175 deer