Name _____ Date _____ KEY

Ch 3 Review

CHAPTER 3 *For use after Chapter 3*

Solve the equation, if posssible.

1. $-7 = -2 + x$

2. $b - \frac{2}{5} = \frac{3}{5}$ $+\frac{2}{5}$ $b = \frac{5}{5} = 1$

3. $-\frac{2}{3}d = 8$ $\cdot -\frac{3}{2}$

4. $17 = 14 + 6y$

5. $2t - 5t = 9$ $-3t = 9$

6. $13 - 9w = -14$ -13 -13 $-9w = -27$

7. $7m - 4 - 2m = 6$ $5m - 4 = 6$

8. $\frac{3}{4}(c + 4) = 3$ $\cdot \frac{4}{3}$ $c + 4 = 4$

9. $5(3 - 2y) + 4y = 3$ $15 - 10y + 4y = 3$

10. $4x - 1 = 2(2x + 3)$ $4x - 1 = 4x + 6$

11. $7a - 3.9a = 6.2$ $3.1a = 6.2$

12. $9 - 5z = 12 - (6z + 7)$ $9 - 5z = 12 - 6z - 7$

13. A new plasma-screen television costs $5250. A family makes a down payment of $552 and pays off the balance in 24 equal monthly payments. Write and solve an equation to find the monthly payment.

x = # payments $552 + 24x = 5250$

14. On a class trip, there were 45 more girls than boys. The total number of students on the trip was 211. Write and solve an equation to find the number of girls and the number of boys on the class trip.

x = # boys $x + 45$ = # girls

Solve the proportion.

15. $\frac{4}{5} = \frac{12}{y}$ $4y = 60$

16. $\frac{1.1}{1.2} = \frac{w}{3.6}$ $1.2w = 3.96$

17. $\frac{16}{9} = \frac{-4t}{27}$ $-36t = 432$

18. $\frac{8}{(m + 3)} = \frac{4}{m}$ $8m = 4(m+3)$ $8m = 4m + 12$

19. $\frac{6}{(x + 4)} = \frac{12}{(5x - 13)}$ $6(5x - 13) = 12(x + 4)$

20. $\frac{5}{(3z - 4)} = \frac{-3}{(1 - 2z)}$ $5(1 - 2z) = -3(3z - 4)$

21. On Monday, biologists tagged 150 sunfish from a lake. On Friday, the biologists counted 12 tagged fish out of a sample of 400 sunfish from the same lake. Estimate the total number of sunfish in the lake.

$\frac{\text{tagged}}{\text{total}}$ $\frac{150}{x} = \frac{12}{400}$

Answers

1. $x = -5$
2. $b = 1$
3. $d = -12$
4. $y = \frac{1}{2}$
5. $t = -3$
6. $w = 3$
7. $m = 2$
8. $c = 0$
9. $y = 2$
10. no solution
11. $a = 2$
12. $z = -4$
13. $24x + 552 = 5250$
    $195.75
14. $x + (x + 45) = 211$
    128 girls 83 boys
15. $y = 15$
16. $w = 3.3$
17. $t = -42$
18. $m = 3$
19. $x = 7$
20. $z = -7$
21. 5000 sunfish

Name _____ Date _____ KEY

CHAPTER 3 *For use after Chapter 3* *continued*

22. ~~A recipe for oatmeal raisin cookies calls for $1\frac{2}{3}$ cups of flour to make 4 dozen cookies. How many cups of flour are needed to make 6 dozen cookies?~~

Solve the percent problem.

$\frac{1.5}{100} = \frac{3}{x}$ **23.** 3 is 1.5% of what number?

24. 9 is what percent of 6? $\frac{x}{100} = \frac{9}{6}$

25. What is 26.5% of 46? $\frac{26.5}{100} = \frac{x}{46}$

26. 70 is 200% of what number? ★

27. In a renovation project, a football stadium increased its 60,000-seat capacity by 15%. How many seats will be available when the project is completed?

Rewrite equation so y is a function of x

28. $5x - y = 7$ $\frac{-y}{-1} = \frac{-5x}{-1} + \frac{7}{-1}$

29. $10x + 3y + 2 = 9x + 8$ ★

In Exercises 30–32, use the following information.
Anthropologists can estimate the height of a woman by measuring the length of her radius bone (from the wrist to the elbow). The length of the radius bone b is given by $b = 0.26h - 18.85$ where h is the height (in centimeters) of the woman.

30. Solve the equation for h. $b = .26h - 18.85$; $\frac{b + 18.85}{.26} = \frac{.26h}{.26}$

31. If the length of a woman's radius bone is 25 centimeters, estimate the height of the woman. Round your answer to the nearest centimeter. $h = \frac{25 + 18.85}{.26}$

32. If 1 in. = 2.54 cm, convert the woman's height to inches. Round your answer to the nearest inch. $\frac{in}{cm}\ \frac{1}{2.54} = \frac{x}{169}$

★ 26. $\frac{200}{100} = \frac{70}{x}$

★ 29. $10x + 3y + 2 = 9x + 8$

$-10x \quad -10x$

$3y + 2 = -1x + 8$

$-2 \quad -2$

$\frac{3y}{3} = \frac{-1x}{3} + \frac{6}{3}$

$y = -\frac{1}{3}x + 2$

Answers

22. ~~X~~
23. 200
24. 150%
25. 12.19
26. 35
27. 69,000 seats
28. $y = 5x - 7$
29. $y = -\frac{1}{3}x + 2$
30. $h = \frac{b + 18.85}{.26}$
31. ≈ 169 cm
32. about 67 in.

Algebra **REVIEW 6.1 – 6.3** Name Key

Hour _____

Solve the inequality. Graph your solution.

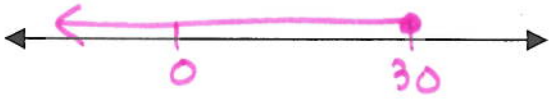
$-72 < 8p$

$\frac{-72}{8} < \frac{8p}{8}$

$-9 < p$ or $p > -9$

$-6 \cdot \frac{w}{-6} \geq -5 \cdot -6$

$w \leq 30$



A fitness walking group walks 4 days each week with a goal of at least 12 miles per week. Write and solve an inequality to find the average number of possible miles *m* the group should walk each day to meet its goal.

m = # miles

$4m \geq 12$

$m \geq 3$

need to walk at least 3 miles each day

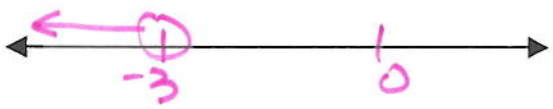
Solve 3(x + 8) < 9. Graph your solution.

$3x + 24 < 9$

$-24 \quad -24$

$\frac{3x}{3} < \frac{-15}{3}$

$x < -3$



Solve the inequality, if possible.

$6k + 1 > 3(2k - 3)$ all R

$6k + 1 > 6k - 9$

$-6k \quad -6k$

$1 > -9$ ← true, so

$5(a - 2) < 5a - 14$ NO SOLUTION

$5a - 10 < 5a - 14$

$-5a \quad -5a$

$-10 < -14$ ← NOT true, so

A box of cat treats contains at least 50 treats. So far you have fed your cats 18 treats. If you want the box of treats to last 8 days, what are the possible average numbers of treats you can feed the cats per day?

x = # of treats per day

$18 + 8x \leq 50$

$-18 \quad -18$

$\frac{8x}{8} \leq \frac{32}{8}$

$18 + 8x \leq 50$

$x \leq 4$