Solving Equations Practice Test 1.1-1.4

1. To which subsets of the real numbers does the number 1.48 belong?
   a. natural numbers, whole numbers, integers, rational numbers
   b. rational numbers, irrational numbers
   c. rational numbers
   d. none of the above

2. To which subsets of the real numbers does the number 63 belong?

   natural, whole, integer, rational

3. To which subsets of the real numbers does the number $\sqrt{19}$ belong?

   irrational

4. What is the order of $\sqrt{5}, -0.9, -\frac{5}{3}, 0.6, \sqrt{3}$ from least to greatest?

   $-\frac{5}{3}, -.9, .6, \sqrt{3}, \sqrt{5}$

What is the solution of the equation?

5. $3.8x + 1.7 = 16.9$

   $-1.7 \quad -1.7$

   $\frac{3.8x}{3.8} = \frac{15.2}{3.8}$

   $x = \frac{15.2}{3.8} = 4$

6. $\frac{4}{5}x + 6 = 8$ (5) (5)

   $4x + 30 = 40$

   $-30 \quad 30$

   $4x = 10$

   $x = \frac{10}{4} = 2.5$

7. $7 = -d + 10$

   $-10 \quad -10$

   $\frac{-3}{-1} = \frac{-1d}{-1}$

   $3 = d$

8. $\frac{b-5}{2} = 8$ (2)

   $b - 5 = 16$

   $+5 \quad +5$

   $b = 21$

9. $25 = -9 - 7x$

   $+9 \quad +9$

   $\frac{34}{-7} = \frac{-7x}{-7}$

   $-\frac{34}{7} = x$

10. $8d + 2d + d - 8 - 5d = 0$

    $6d - 8 = 0$

    $+8 \quad +8$

    $\frac{6d}{6} = \frac{8}{6}$

    $d = \frac{8}{6} = \frac{4}{3}$

11. $-6y + 14 + 4y = 32$

    $-2y + 14 = 32$

    $-14 \quad -14$

    $\frac{-2y}{-2} = \frac{18}{-2}$

    $y = -9$

12. $13 = -2p + 8 + 3p$

    $13 = p + 8$

    $-8 \quad -8$

    $5 = p$

13. $3(y + 3) + 4 = 40$

    $3y + 9 + 4 = 40$

    $3y + 13 = 40$

    $-13 \quad -13$

    $\frac{3y}{3} = \frac{27}{3}$

    $y = 9$

What is the solution of the equation?

14. $3(y-3)=18$

$3y-9=18$
$+9\ \ +9$
$\frac{3y}{3}=\frac{27}{3}$
$y=9$

15. $\frac{2p}{4}-\frac{38(4)}{4}=-8(4)$

$2p-38=-32$
$+38\ \ +38$
$\frac{2p}{2}=\frac{6}{2}$
$p=3$

16. $-9(x+2)=-2(8x-5)$

$-9x-18=-16x+10$
$+16x\qquad +16x$
$7x-18=10$
$+18\ \ +18$
$\frac{7x}{7}=\frac{28}{7}$
$x=4$

17. $2(h-5)-h=h-10$

$2h-10-h=h-10$
$h-10=h-10$
h is All Real #'s

18. $-11+6z=-6+6z$

No Solution

19. $\frac{4}{1}(x+1)=6(7)$

$4x+4=42$
$-4\ \ -4$
$\frac{4x}{4}=\frac{38}{4}$
$x=\frac{38}{4}=\frac{19}{2}=9.5$

20. $\frac{2}{6}x+\frac{6(42)}{7}=2(42)$

$14x+36=84$
$-36\ \ -36$
$\frac{14x}{14}=\frac{48}{14}$
$x=\frac{48}{14}=\frac{24}{7}$

21. $\frac{2x-7}{6}=\frac{3x+1}{10}$

$20x-70=18x+6$
$-18x\qquad -18x$
$2x-70=6$
$+70\ \ +70$
$\frac{2x}{2}=\frac{76}{2}$
$x=38$

22. The parking garage at Lego Land charges you \$30 to enter but only \$3 per hour. The parking garage at the hotel next door knows that people will park in their lot. So they charge \$10 to enter and \$7 per hour. Write and solve an equation to find the number of hours in which the garages will cost the same amount.

$30+3x=10+7x$
$20=4x$
$5=x$

23. a. Solve P = 2L+ 2w for L

$P=2L+2w$
$\frac{P}{2}-\frac{2w}{2}=\frac{2L}{2}$
$\frac{P}{2}-w=L$

b. If you have 52 feet of lumber to construct the sides of a sandbox, and the length is set at 16 feet, how wide can the sandbox be?

$\frac{52}{2}-16=L$
$L=10$

24. a. Solve $\frac{A}{\ell}=\frac{lw}{\ell}$ for w

$\frac{A}{\ell}=w$

b. If the length of a rectangular sandbox is set at 16 feet, what width is required to obtain an area of 200 square feet?

$\frac{200}{16}=w$