Adaptive Algebra 2 - Chapter 1 practice test Name: _____

Chapter 1 practice test

1-4 Solve and graph the following inequalities and equations

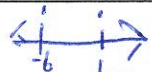
1) $|2x+5|=7$

$2x+5=7$ or $2x+5=-7$

$-5 \quad -5 \qquad -5 \quad -5$

$\frac{2x}{2}=\frac{2}{2} \qquad \frac{2x}{2}=\frac{-12}{2}$

$x=1$ or $x=-6$



2) $|6x+4|-2=26$

$+2 \quad +2$

$|6x+4|=28$

$6x+4=28$ or $6x+4=-28$

$-4 \quad -4 \qquad -4 \quad -4$

$6x=24$ or $6x=-32$

$x=4$ or $x=-5.\overline{33}$

3) $4x-1>19$

$+1 \quad +1$

$\frac{4x}{4}>\frac{20}{4}$

$x>5$

4) $8 \le 4x-4 < 20$

$+4 \quad +4 \quad +4$

$\frac{12}{4} \le \frac{4x}{4} < \frac{24}{4}$

$3 \le x < 6$

5) Give the opposite of 75 _____-75_____

6) Give the reciprocal of 75 _____$\frac{1}{75}$_____

Matching – choose the *best* answer – put the letter in the blank (#7-10)

Choices:

a) Whole Numbers

b) Integers

c) Irrational Numbers

d) Real Numbers

e) Rational Numbers

7) {…-2, -1, 0, 1, 2, 3…} 7) _____b_____

8) Examples: $-\frac{1}{3}$, 220, 0.4, -3 8) _____e_____

9) {0, 1, 2, 3, 4…} 9) _____a_____

10) Examples: $\sqrt{5}$, -5, 0, π, -0.5 10) _____d_____

11) Evaluate if x = -2 and y = 8: $\frac{6-(10+y)\cdot 3 \div (-x)}{x^4}$

$\frac{6-(10+(8))\cdot 3 \div (-(-2))}{(-2)^4}$

$\frac{6-18\cdot 3 \div 2}{16} = \frac{6-54 \div 2}{16} = \frac{6-27}{16} = \boxed{\frac{-21}{16}}$

12) Simplify: $3(48x-36y)+10y$

$144x-108y+10y$

$\boxed{144x-98y}$

13) Solve: $|2x-4|=20$

$2x-4=20$ or $2x-4=-20$

$+4 \quad +4 \qquad +4 \quad +4$

$\frac{2x}{2}=\frac{24}{2} \qquad \frac{2x}{2}=\frac{-16}{2}$

$\boxed{x=12} \qquad \boxed{x=-8}$

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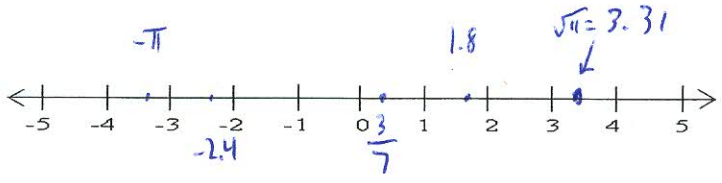
14) Graph the following numbers on the given number line: $\sqrt{11}, -\pi, 1.8, \frac{3}{7}, -2.4$



15) If you are driving 40 miles per hour, what is your speed in feet per second?

$$\frac{40 \text{ miles}}{1 \text{ hr}} \cdot \frac{1 \text{ hr}}{60 \text{ min}} \cdot \frac{1 \text{ min}}{60 \text{ sec}} \cdot \frac{5280 \text{ ft}}{1 \text{ mile}} = \frac{40 \cdot 5280 \text{ ft}}{60 \cdot 60 \text{ sec}} = \frac{211200 \text{ ft}}{3600 \text{ sec}}$$

$$= 58.67 \text{ ft/sec}$$

16) A car salesman earns a $28,000 yearly salary plus 5 % commission on all car sales. How much money in cars must he sell to earn $55,000 for the year?

$28,000 + .05x = 55,000$

$-28,000 \qquad -28,000$

$\frac{.05x}{.05} = \frac{27,000}{.05}$

$x = \$540,000$ in Car sales

17) If a plane travels at a speed of 520 miles per hour from New York to San Francisco and the flight is 3380 miles, how long does the flight take?

$$\frac{3380}{520} = 6.5 \text{ hour}$$

18) Which of the following is a solution of the equation $\frac{x}{4} - 12 = 4$ $+12 \quad +12$

$4 \cdot \frac{x}{4} = 16 \cdot 4$

$x = 64$

a) -64 b) -32 c) 32 d) 64

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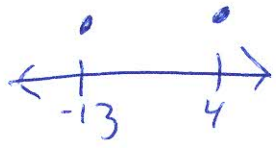
19) Solve and *Graph* the following equation $|2x+9| = 17$

$2x+9=17$ or $2x+9=-17$

$-9 \quad -9 \qquad -9 \quad -9$

$\frac{2x}{2} = \frac{8}{2} \qquad \frac{2x}{2} = \frac{-26}{2}$

$x = 4$ or $x = -13$



20) Solve and Graph the following equation $|2x+5|=3x$

$2x+5=3x$ or $2x+5=-3x$

$-2x \quad -2x \qquad +3x \quad +3x$

$5 = x$ or $5x+5=0$

$-5 \quad -5$

$\frac{5x}{5} = \frac{-5}{5}$

$x = -1$

Check answers

$|2(5)+5| = 3(5)$

$|10+5| = 15$

$|15| = 15$ ✓

$15 = 15$

$|2(-1)+5| = 3(-1)$

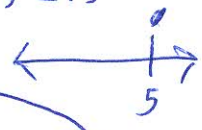
$|-2+5| = -3$

$|3| = -3$

$3 \neq -3$

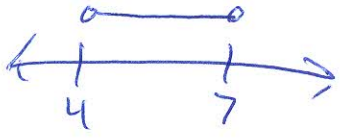
Not work

-1 not a solution

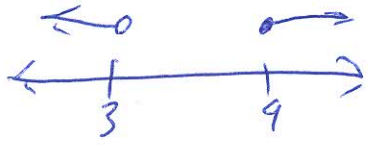


21) Graph the following on a number line:

a) x>4 and x<7



b) $x \geq 9$ or $x < 3$



22) The circumference of a circle is 20 feet. Use this information to decipher what the radius of the circle is.

$C = 2\pi r$

$\frac{20}{2\pi} = \frac{2\pi r}{2\pi}$

$\frac{20}{2\pi} = r$

$r = \frac{20}{2(3.14)} \approx 3.18 ft$