

UNIT 1 REVIEW FOR TEST

Name _____

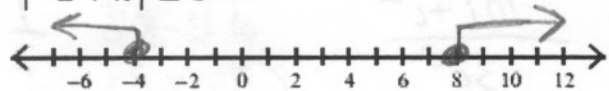
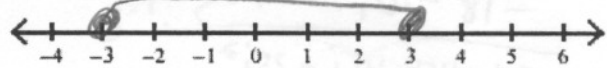
Number System (1.1)

Be able to classify numbers into all appropriate number systems:
Real, Rational, Irrational, Complex, Imaginary, Integer, Whole, Natural

Properties (1.1)

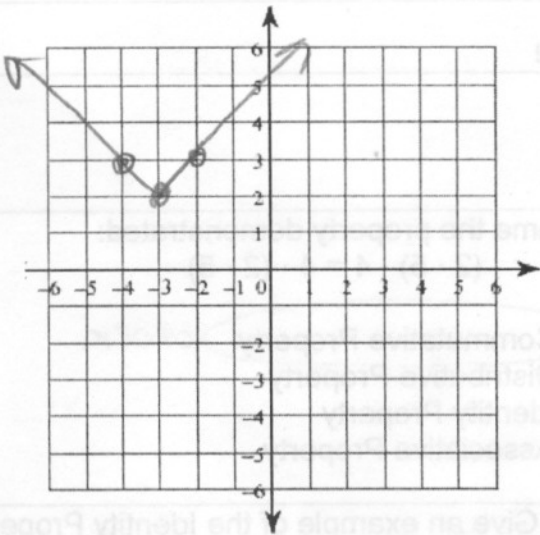
<p>1) Name the property demonstrated: $8 + (-8) = 0$</p> <p>A) Distributive Property <u>B) Inverse Property</u> C) Identity Property D) Associative Property</p>	<p>2) Name the property demonstrated: $(2 \cdot 5) \cdot 4 = 4 \cdot (2 \cdot 5)$</p> <p><u>A) Commutative Property</u> ORDER B) Distributive Property C) Identity Property D) Associative Property</p>
<p>3) Give an example of the Associative Property of Addition: $(a+b)+c = a+(b+c)$</p>	<p>4) Give an example of the Identity Property of Multiplication: $a \cdot 1 = a$</p>

Absolute value (1.7, 2.7, 2.8)

<p>5) Solve:</p> $ -7 + 3r + 4 = 18$ $ -7 + 3r = 14$ <p style="margin-left: 200px;"> $-7 + 3r = 14$ or $-7 + 3r = -14$ $3r = 21$ $3r = -7$ <u>$r = 7$</u> or <u>$r = -\frac{7}{3}$</u> </p>	
<p>6) Solve and graph your solution:</p> $ -2 + n \geq 6$  <p>$-2 + n \geq 6$ OR $-2 + n \leq -6$ <u>$n \geq 8$ OR $n \leq -4$</u></p>	<p>7) Solve and graph your solution:</p> $ -4n \leq 12$  <p>$-4n \leq 12$ AND $-4n \geq -12$ $\frac{-4n}{-4} \leq \frac{12}{-4}$ $\frac{-4n}{-4} \geq \frac{-12}{-4}$ <u>$n \geq -3$ AND $n \leq 3$</u> ↑ ↑ Flip b/c you divided both sides by a negative number </p>

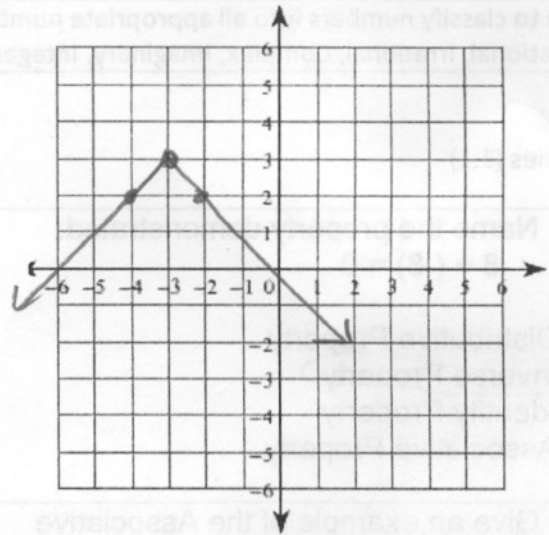
8) Graph:

$$y = |x + 3| + 2$$



9) Graph:

$$y = -|x + 3| + 3$$



Complex Numbers (4.6)

10) Simplify:

$$(7 - 4i) - 2 - 4$$

$$-1 - 4i$$

11) Simplify:

$$(-8 + 4i) - (-7 - 2i)$$

$$-8 + 4i + 7 + 2i$$

$$-1 + 6i$$

12) Simplify:

$$2(2i)(4 + 3i)$$

$$4i(4 + 3i)$$

$$16i + 12i^2$$

$$16i + 12(-1)$$

$$16i - 12$$

13) Simplify:

$$\frac{2}{-9 + 5i} \cdot \frac{-9 - 5i}{-9 - 5i}$$

$$\frac{-18 - 10i}{81 + 45i - 45i - 25i^2}$$

$$\frac{-18 - 10i}{81 - 25(-1)}$$

$$\frac{-18 - 10i}{81 + 25}$$

$$\frac{-18 - 10i}{106}$$

$$\frac{-18}{106} - \frac{10i}{106}$$

$$\frac{-9}{53} - \frac{5i}{53}$$

14) Simplify:

$$\frac{-10 + i}{-3i} \cdot \frac{i}{i}$$

$$\frac{-10i + i^2}{-3i^2}$$

$$\frac{-10i - 1}{-3(-1)}$$

$$\frac{-10i - 1}{3}$$

$$\frac{-10i}{3} - \frac{1}{3}$$

$$-\frac{10i}{3} - \frac{1}{3}$$

Exponents and Radicals (5.1 and 4.5)

<p>15) Write in Radical Form: $(6n)^{\frac{2}{3}}$</p> <p>$\sqrt[3]{(6n)^2}$</p>	<p>16) Write in Exponential Form: $(\sqrt[3]{7v})^5$</p> <p>$(7v)^{\frac{5}{3}}$</p>
<p>17) Simplify $(\frac{x^2}{y^2})^{-4}$</p> <p>$\frac{x^{-8}}{y^8}$ $\frac{1}{x^8 y^8}$</p>	<p>18) Simplify $\frac{2x^{-2}y^5}{16x^3y^{-2}}$</p> <p>$\frac{2y^5y^2}{16x^3x^2}$ $\frac{y^7}{8x^5}$</p>
<p>19) Simplify: $\sqrt{150}$</p> <p>$\sqrt{25} \sqrt{6}$</p> <p>$5\sqrt{6}$</p>	<p>20) Simplify: $\frac{3+\sqrt{7}}{2-\sqrt{10}} \cdot \frac{2+\sqrt{10}}{2+\sqrt{10}}$</p> <p>$\frac{6+3\sqrt{10}+2\sqrt{7}+\sqrt{70}}{4+2\sqrt{10}-2\sqrt{10}-10}$</p> <p>$\frac{6+3\sqrt{10}+2\sqrt{7}+\sqrt{70}}{-6}$</p>

Apply same properties to Fractional Exponents and Higher Degree Radicals (6.1 and 6.2)

<p>21) Simplify: $81^{\frac{1}{2}}$</p> <p>$(9^2)^{\frac{1}{2}}$</p> <p>9</p>	<p>22) Simplify: $27^{-\frac{2}{3}}$</p> <p>$(3^3)^{-\frac{2}{3}}$</p> <p>$3^{-2} \Rightarrow \frac{1}{9}$</p>
<p>23) Simplify: $\sqrt[3]{48}$</p> <p>$\sqrt[3]{8} \sqrt[3]{6}$</p> <p>$2\sqrt[3]{6}$</p>	<p>24) Simplify: $(3^4 \cdot 5^4)^{-\frac{1}{4}}$</p> <p>$3^{-1} \cdot 5^{-1}$</p> <p>$\frac{1}{3 \cdot 5} \Rightarrow \frac{1}{15}$</p>
<p>25) Simplify: $(25a^{10}b^{16})^{\frac{1}{2}}$</p> <p>$25^{\frac{1}{2}} a^{10/2} b^{16/2}$</p> <p>$(5^2)^{\frac{1}{2}} a^5 b^8$</p> <p>$5a^5b^8$</p>	<p>26) Simplify: $\sqrt{\frac{18x^5y^4}{49xz^3}} \cdot \sqrt{\frac{xz}{2}} = \sqrt{\frac{18x^6y^4z}{49x^2z^4}}$</p> <p>$\frac{\sqrt{9 \cdot 2 \cdot x^2 \cdot x^2 \cdot x^2} \cdot y^2 \cdot z}{\sqrt{49 \cdot x^2 \cdot z^2 \cdot z^2}} = \frac{3x^3y^2\sqrt{2}}{7xz^2}$</p> <p>$= \frac{3x^2y^2\sqrt{2}}{7z^2}$</p>