2. If $\frac{2x}{x^2+1} = \frac{2}{x+2}$, what is the value of x ?

(A) $-\frac{1}{4}$

(B) $\frac{1}{4}$

(C) $\frac{1}{2}$

(D) 0

(E) 2

3. A survey of Town X found an average (arithmetic mean) of 3.2 persons per household and a mean of 1.2 televisions per household. If 48,000 people live in X, how many televisions are in Town X ?

(A) 15,000
(B) 16,000
(C) 18,000
(D) 40,000
(E) 57,600

6. If $9b = 81$, then $\sqrt{b} \times \sqrt[3]{3b} =$

(A) 9
(B) 27
(C) 81
(D) 243
(E) 729

Note: Figure not drawn to scale.

11. If $AB > CD$, which of the following must be true?

I. $AB > BC$
II. $AC > BD$
III. $AC > CD$

(A) I only
(B) II only
(C) III only
(D) II and III only
(E) I, II, and III

Bellwork Answers

Tues 12-1-15

(2)

$$\frac{2x}{x^2+1} = \frac{2}{x+2}$$

cross multiply to get:

$$2(x^2+1) = 2x(x+2)$$

$$2x^2+2 = 2x^2+4x$$

$$-2x^2 \qquad -2x^2$$

$$\frac{2}{4} = \frac{4x}{4}$$

$$x = 2/4 = 1/2$$

C

(3)

$$\#\text{households} = \frac{48{,}000 \text{ people}}{3.2 \text{ persons/house}}$$

$$\#\text{households} = 15{,}000$$

$$\#\text{TV} = (15{,}000 \text{ houses})(1.2 \text{ TV/hou}$$

$$= 18{,}000 \text{ TVs}$$

C

(6)

$$\frac{9b}{9} = \frac{81}{9}$$

$$b = 9$$

$$\sqrt{b} \times \sqrt[3]{3b}$$

$$= \sqrt{9} \times \sqrt[3]{3 \cdot 9}$$

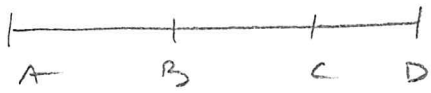
$$= 3 \times \sqrt[3]{27}$$

$$= 3 \times 3$$

$$= 9$$

A

(11) Given $AB > CD$



I $AB > BC$ ✗ you don't know how long $\overline{BC}$ is

II $AC > BD$ ✓ THIS TAKES the original statement & adds BC to both sides.

$$AB + BC > CD + BC$$

$$AC > BD$$

III $AC > CD$ ✓ if $AB > CD$ and you add BC to just the left side it will make the left side even bigger

D