19

$$13r + 8v = 47$$
$$22v = 63 - 17r$$

Based on the system of equations above, what is the sum of r and v?

$(11) \quad 13r + 8v = 47 \ (11)$
$(4) \quad 17r + 22v = 63 \ (4)$

$\begin{array}{c} 136 \\ 1B \end{array}$

$143r + 88v = 517$
$68r + 88v = 252$

$143r + 88v = 517$
$-68r - 88v = -252$
_____
$75r = 265$

$\dfrac{75r}{75} = \dfrac{265}{75}$

$r = \dfrac{265}{75}$

$68 \cdot \dfrac{265}{75} + 88v = 252$

SO... $\quad 13r + 8v = 47$
$\quad\quad 22v = 63 - 17r$

$13r + 8v = 47$
$+ 17r + 22v = 63$
_____
$30r + 30v = 110$

$\dfrac{30(r + v)}{30} = \dfrac{110}{30}$

$\boxed{r + v = \dfrac{110}{30}}$

20

A gardener has a cultivated plot that measures 4 feet by 6 feet. Next year, she wants to double the area of her plot by increasing the length and width by x feet. What is the value of x?

24

$(6 + x)(4 + x) = 48$

$24 + 6x + 4x + x^2 = 48$

$10x + x^2 + 24 = 48$

$x^2 + 10x - 24 = 0$

$-24 \quad (x - 4)(x - 6) = 0$

$-2 \times 12 \quad x = 4$

$10 \quad (x - 2)(x + 12)$

$\boxed{2}$
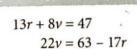
STOP
If you finish before time is called, you may check your work on this section only.
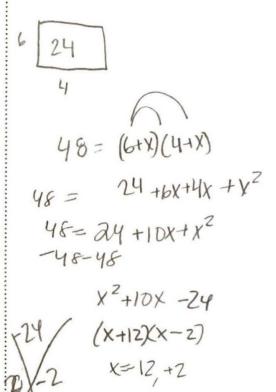Do not turn to any other section in the test.

19

$$13r + 8v = 47$$
$$22v = 63 - 17r$$

Based on the system of equations above, what is the sum of r and v?

$(11) \quad 13r + 8V = 47 (11)$
$(4) \quad +17r + 22v = 63 (4)$

$\begin{array}{ll} 130 \\ 13 \end{array} \qquad \begin{array}{l} 240 \\ 12 \end{array} \quad \begin{array}{l} 470 \\ 47 \end{array}$

$143r + 88v = 517$
$- 68r + 88v = 252$

$\dfrac{75r}{75} \qquad \dfrac{= 265}{75}$

$r =$

3.46

20

A gardener has a cultivated plot that measures 4 feet by 6 feet. Next year, she wants to double the area of her plot by increasing the length and width by x feet. What is the value of x?

6 $\boxed{24}$

4

$48 = (6+x)(4+x)$

$48 = \quad 24 + 6x + 4x + x^2$

$48 = 24 + 10x + x^2$
$-48 - 48$

$x^2 + 10x - 24$

$(x + 12)(x - 2)$

$x = 12, +2$

$\boxed{2}$

$\dfrac{-24}{12 \ | -2}$
10

STOP

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.

$$13r + 8v = 47$$
$$22v = 63 - 17r$$

$$13r + 8v = 47$$
$$17r + 22v = 63$$

$$30r + 30v = 110$$

$$(r + v)30 = 110$$

$$\left(\frac{1}{30}\right)(r + v)(30) = 110\left(\frac{1}{30}\right)$$

$$(r + v) = \frac{110}{30}$$