

16. The length of a rectangle is 4 m more than the width. The area of the rectangle is 45m^2 . Find the length and width.

9m by 5m

17. Change from the General form to the Standard Form by Completing the Square. State the Vertex, and the Axis of symmetry of each

$y = 4x^2 + 8x + 9$	$y = -x^2 + 4x + 6$	$y = 3x^2 + 6x + 4$
$y = x^2 + 2x - 7$	$y = -x^2 - 6x + 1$	$y = -3x^2 + 18x + 10$

Solutions

$y = 4(x + 1)^2 + 13$ (- 1, 13) x = - 1	$y = - (x - 2)^2 + 10$ (2, 10) x = 2	$y = 3(x + 1)^2 + 1$ (- 1, 1) x = - 1
$y = (x + 1)^2 - 8$ (- 1, - 8) x = - 1	$y = - (x + 3)^2 + 10$ (- 3, 10) x = - 3	$y = - 3(x - 3)^2 + 37$ (3, 37) x = 3

18. Translate the following quadratic as indicated and write the new equation in the same form as the original.

$$y = - 2(x + 4)^2 - 2$$

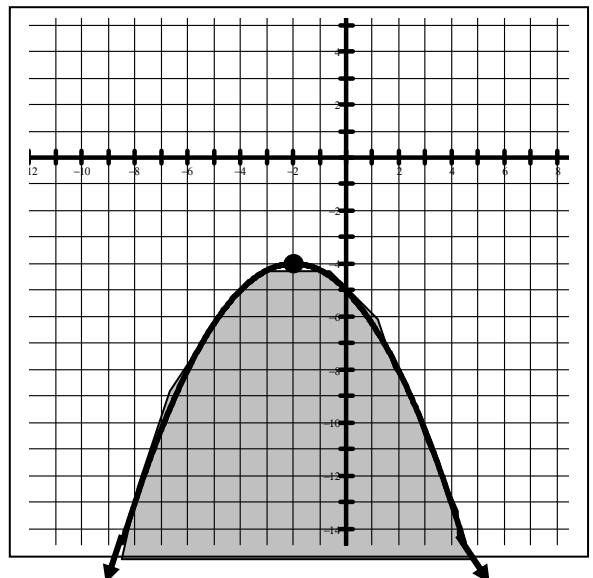
~

translate it 6 West and 5 North

$$y = - 2(x + 10)^2 + 3$$

19. State the domain and range for the following quadratic

DOMAIN	$\{x \mid x \in \mathbb{R}\}$
RANGE	$\{y \mid y \leq - 4; y \in \mathbb{R}\}$

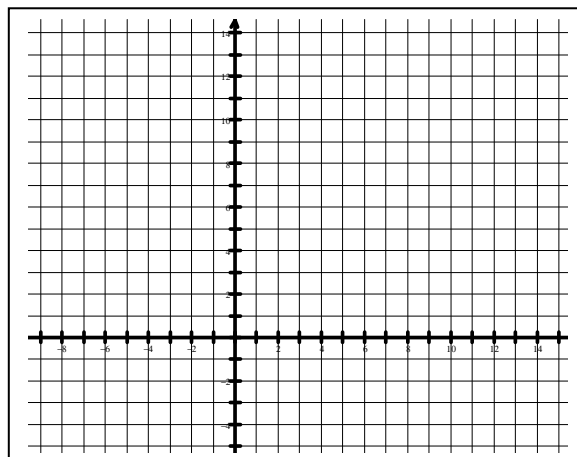


20. Write an equation in standard form given the following information.

A stretch of $\frac{1}{2}$

a vertex of $(4, 7)$

passing through point $(8, -1)$



Solution $y = \frac{1}{2}(x - 4)^2 + 7$

21. For which value(s) of t does the equation $x^2 + tx + t + 3 = 0$ have two equal real roots?

$x = -2$ or $x = 6$

22. . A tourist travels 300km by train and 400km by bus. He traveled an average of 20km/hr faster by train than by bus. What was the speed of the train if the total trip took 8 hours

**Bus 80 km/h
Train 100 km/h**

