# Applications of Polynomials
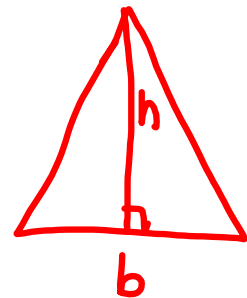
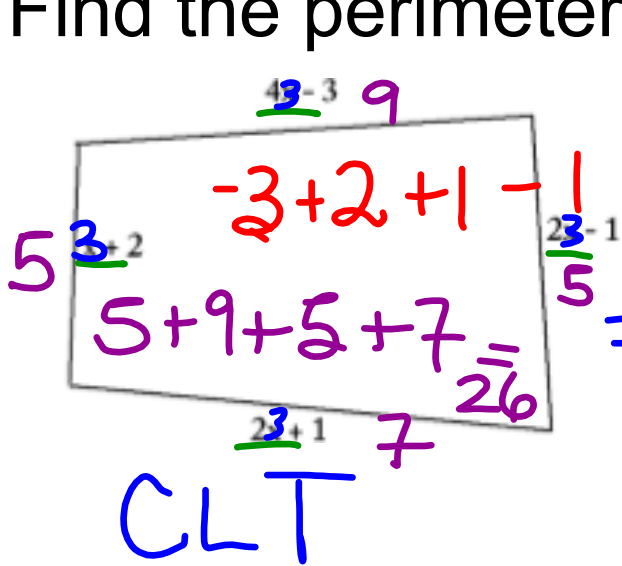**TO FIND PERIMETER,** ADD UP ALL THE SIDES.

**TO FIND AREA,** IDENTIFY SHAPE AND USE FORMULA.

Area of Rectangle = $\ell \cdot w$

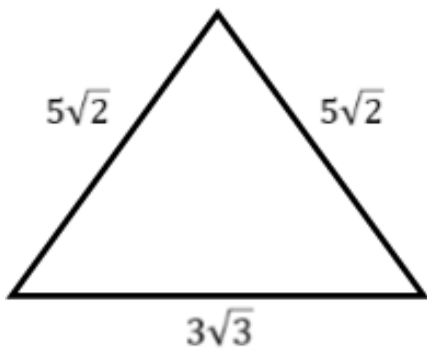Area of Triangle = $\frac{1}{2} \cdot b \cdot h$

# Find the perimeter.

$4x - 3$   $9$

$5$   $x + 2$   $-3 + 2 + 1 - 1$   $2x - 1$ / $5$

$5 + 9 + 5 + 7 = 26$

$2x + 1$   $7$

CLT

$(4x - 3) + (x + 2)$
$+ (2x - 1) + (2x + 1)$
$= 9x - 1$

$x = 3$

$9(3) - 1 = 26$

# Find the perimeter.

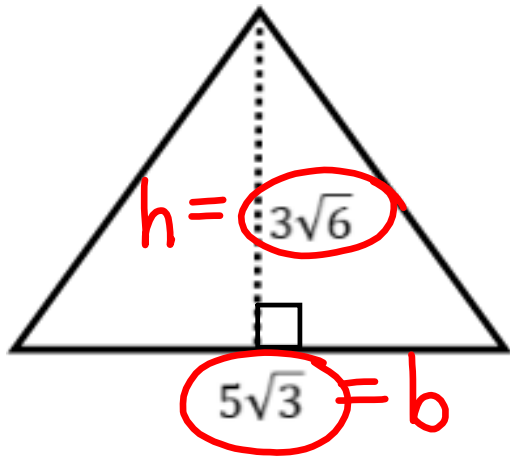$5\sqrt{2}$   $5\sqrt{2}$

$3\sqrt{3}$

$5\sqrt{2} + 5\sqrt{2} + 3\sqrt{3}$

$10\sqrt{2} + 3\sqrt{3}$

$5x^2-3x$　　　　$3x^2-4$

$10x+2$

$(5x^2-3x) + (10x+2) + (3x^2-4)$

$= 8x^2 + 7x - 2$　　$x=2$

$8(2)^2 + 7(2) - 2$
$8 \cdot 4$

$= 32 + 14 - 2 = 44$

## Find the area.

$-2x + 6 = w$

$-2+6 = 4$

$6x + 11 = l$

$6 + 11$
$17$

$4 \cdot 17 = 68$　When $x = 1$

$(-2x+6)(6x+11)$

$-2x(6x+11) + 6(6x+11)$

$-12x^2 = 22x + 36x + 66$

$-12x^2 + 14x + 66$
　(1)　　(1)

$-12 + 14 + 66$

$= 68$

# Find the area.



$h = 3\sqrt{6}$

$5\sqrt{3} = b$

$A = \frac{1}{2}bh$

$A = \frac{1}{2}(5\sqrt{3})(3\sqrt{6})$

$= 7.5\sqrt{18}$

$= 22.5\sqrt{2}$

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$2x+5$

$4x \mid 8x^2 \mid 20x$

$-1 \mid 2x \mid -5$

$4x-1=h$

$b = 2x+5$

$x = 4$

$A = \frac{1}{2}bh$

$\frac{1}{2}[(4x-1)(2x+5)]$

$\frac{1}{2}(8x^2 + 18x - 5)$

Rule $= \phantom{xx} -\frac{5}{2}$

$4x^2 + 9x - 2.5$

$4(4)^2 + 9(4) - 2.5$

$4 \cdot 16$

$64 + 36 - 2.5$

$= 97.5$

Touchstone

1.  **Find the difference between the polynomials.**

$$(-5x^2 + x - 5) - (-3x^2 - 8x - 3)$$

A.  $-8x^2 - 7x - 8$

B.  $-2x^2 + 9x - 2$

C.  $-8x^2 + 9x - 8$

D.  $-2x^2 - 7x - 2$

2.  **Find the product to the following expression.**

$$(x - 15)(x - 3)$$

A.  $x^2 + 45$

B.  $x^2 - 18x - 45$

C.  $x^2 - 18x + 45$

D.  $x^2 - 12x + 45$

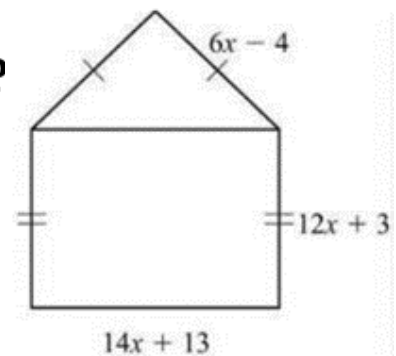3.  **Which answer choice is equivalent to the expression?**

$$(x + 6)^2$$

A.  $x^2 + 12x + 12$
B.  $x^2 + 12x + 36$
C.  $x^2 + 6x + 36$
D.  $x^2 + 36$

4.  **A model of a house is shown.**
    **What is the perimeter of the model?**

A.  32x + 12
B.  46x + 25
C.  50x + 11
D.  64x + 24



$6x - 4$

$12x + 3$

$14x + 13$

5. What is the <u>area</u> of the rectangle shown?
Simplify completely.

A. $2x^2 - x - 28$

B. $2x^2 + x - 28$

C. $x^2 - 8x + 45$

D. $x^2 - x + 28$

$x + 4$

$2x - 7$