REVIEW: Evaluating Algebraic Expressions

Name _____

Key Concept and Vocabulary

variable

Expression: $2x^2 + 3x - 6$

Evaluate when $x = 2$.

$$2(2^2) + 3(2) - 6 = 8 + 6 - 6$$
$$= 8$$

Visual Model

x	$2x + 3$	Value of Expression
1	$2(1) + 3$	5
2	$2(2) + 3$	7
3	$2(3) + 3$	9
4	$2(4) + 3$	11

Skill Examples

1. When $x = 5$, $3x + 4$ is $3(5) + 4 = 19$.
2. When $x = -1$, $5x + 7$ is $5(-1) + 7 = 2$.
3. When $x = 3$, $4x^2$ is $4(3^2) = 36$.
4. When $x = 4$, $x^3 + 1$ is $4^3 + 1 = 65$.

Application Example

5. For a Celsius temperature C, the Fahrenheit temperature F is $\frac{9}{5}C + 32$. Find F when $C = 25°$.

$$\frac{9}{5}C + 32 = \frac{9}{5}(25) + 32$$
$$= 45 + 32$$
$$= 77$$

∴ The Fahrenheit temperature is 77°.

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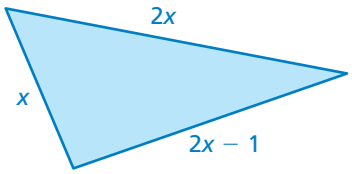
Check your answers at BigIdeasMath.com.

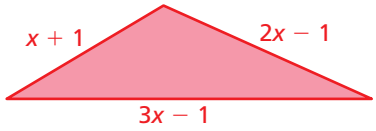
Evaluate the expression.

6. When $x = 2$, $3x - 1 =$ 5.
7. When $x = -1$, $3x + 9 =$ 6.
8. When $x = 4$, $x^2 - 5 =$ 11.
9. When $x = \frac{1}{2}$, $3x^2 =$ $\frac{3}{4}$.
10. When $x = 3.1$, $5x + 0.5 =$ 16.
11. When $x = 0$, $4x^2 + 5 =$ 5.
12. When $x = 10$, $x^2 - 8x + 11 =$ 31.
13. When $x = 2\frac{1}{2}$, $6x + 3 =$ 18.

Evaluate the perimeter when $x = 3$.

14. 

$P =$ 14

15. 

$P =$ 17

16. **CARDINAL** The weight of the cardinal (in ounces) is $0.6x + 11$ after its eats x ounces of bird seed. How much does it weigh after it eats 2 ounces of bird seed? 12.2 oz