

## SOL Warm-Up

### Graphing Calculator Active

#### A.2a Translating verbal expressions into algebraic expressions

1. Which of the following expressions represents 7 times a number decreased by 13?  
  
**A**  $7x + 13$   
**B**  $7x - 13$   
**C**  $13 - 7x$   
**D**  $13 + 7x$
  
2. Which of the following expressions represents 94 increased by twice a number?  
  
**A**  $2x + 94$   
**B**  $94 - 2x$   
**C**  $\frac{x}{2} - 94$   
**D**  $x - 188$
  
3. Which one of the following expressions represents 28 less than three times a number?  
  
**A**  $28 - 3x$   
**B**  $3x - 28$   
**C**  $28 + 3x$   
**D**  $3x + 28$
  
4. Which of the following expressions represents six times Bob's age decreased by 8 ?  
  
**A**  $8 - 6x$   
**B**  $6x + 8$   
**C**  $6x - 8$   
**D**  $8 + 6x$

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#### A.2b Translating verbal expressions into algebraic expressions

1. Which of the following expressions represents 42 less than four times a number?

**A**  $42 + 4x$

**B**  $4x - 42$

**C**  $4x + 42$

**D**  $42 - 4x$

2. Which of the following expressions represents the sum of 16 and five times a number?

**A**  $5x - 16$

**B**  $16 + 5x$

**C**  $16x + 5$

**D**  $16 - 5x$

3. Which one of the following expressions represents 14 inches shorter than 6 times Joe's height?

**A**  $14 - 6x$

**B**  $6x + 14$

**C**  $6x - 14$

**D**  $14 + 6x$

4. Which of the following expressions represents John's bowling score minus 19 pins?

**A**  $19 - x$

**B**  $x + 19$

**C**  $19 + x$

**D**  $x - 19$

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#### A.2c Simplifying and evaluating expressions

1. Which of the following expressions represents the sum of 5 and a number divided by 3?

A  $\frac{5}{x} + 3$

B  $\frac{x}{5} + 3$

C  $5 + \frac{x}{3}$

D  $5 + \frac{3}{x}$

2. Which of the following expressions represents four less than the square of a number?

A  $4 - x^2$

B  $4 - 2x$

C  $2x - 4$

D  $x^2 - 4$

3. What is the value of  $\frac{2n + m}{t}$  if  $n = -8$ ,  $m = 4$ , and  $t = 2$  ?

A 10

B -10

C 6

D -6

4. What is the value of  $-10 - 4x$  if  $x = -13$ ?

A -52

B -42

C 42

D 52

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**A.2d** Relating a polynomial expression to a verbal expression

1. Which of the following verbal expressions represents  $4x - 10$ ?

- A** 4 times a number increased by 10
- B** 10 more than 4 times a number
- C** 4 times a number decreased by 10
- D** 10 plus 4 times a number

2. Which of the following verbal expressions represents  $2x + 9$ ?

- A** 9 increased by twice a number
- B** a number increased by nine
- C** twice a number decreased by 9
- D** 9 less than twice a number

3. Which of the following verbal expressions represents  $x^2 + 2x$ ?

- A** the sum of a number squared and twice a number
- B** the sum of a number and twice the number
- C** twice a number less than the number squared
- D** the sum of a number and twice the number squared

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#### A.2e Evaluating expressions

1. What is the value of  $2x - 5y$  if  $x = -3$  and  $y = -5$ ?

- A - 31
- B -19
- C 19
- D 31

2. What is the value of  $10 - 4x$  if  $x = -13$ ?

- A - 62
- B -42
- C 42
- D 62

3. What is the value of  $10 + 4x$  if  $x = -13$ ?

- A - 62
- B -42
- C 42
- D 62

4. The perimeter (P) of a rectangle can be calculated by adding 2 times the length (l) to 2 times the width (w) or  $P = 2l + 2w$ . What is the perimeter of a rectangle that has a length of 16.3 and a width of 11.9?

- A 28.2
- B 193.97
- C 56.4
- D 8.8

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#### A.2f Evaluating expressions

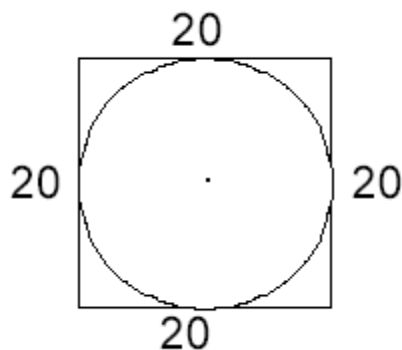
1. What is the value of  $5k^3$  if  $k = -4$ ?  
**A** -8000  
**B** -320  
**C** -20  
**D** 320
  
2. What is the value of  $5r$  if  $r = 4x^2$  and  $x = -3$ ?  
**A** -144  
**B** 144  
**C** 180  
**D** 720
  
3. What is the value of  $-5x^3 + x^2$  if  $x = -3$ ?  
**A** 126  
**B** 135  
**C** 141  
**D** 144
  
4. What is the value of  $10x^3 - x$  if  $x = -2$ ?  
**A** -80  
**B** -78  
**C** 80  
**D** 82
  
5. What is the value of  $4 + 3^x$  if  $x = 3$ ?  
**A** 13  
**B** 16  
**C** 27  
**D** 31

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**A.2g** Evaluating verbal quantitative situations if  $\pi = 3.14$

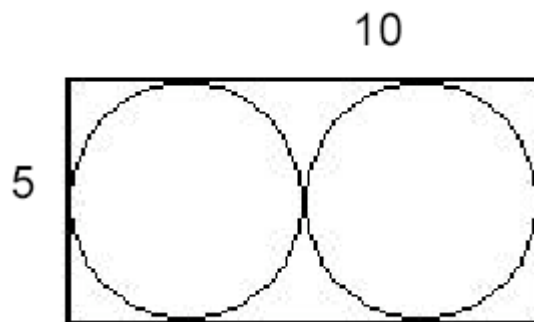
1. If a side of the square has length 20, what is the area of the circle?

- A 1,257
- B 314
- C 125.6
- D 68.8



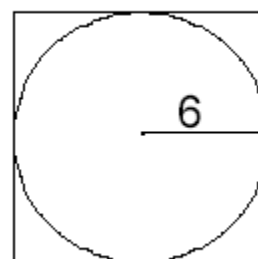
2. What is the combined area of the two circles?

- A 19.63
- B 157
- C 39.25
- D 62.8



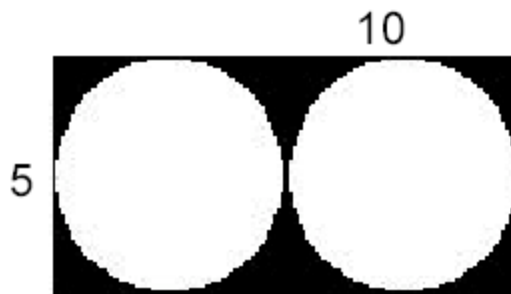
3. If the length of the radius of the circle is 6, what is the area of the square?

- A 12
- B 48
- C 72
- D 144



4. What is the area of the shaded region?

- A 10.37
- B 10.75
- C 42.52
- D 127.5



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#### A.2h Evaluating verbal quantitative situations

1. The pay ( $P$ ) at a certain job is calculated by multiplying the base pay ( $B$ ) by the number of hours worked ( $h$ ) ( $P = Bh$ ). If an employee works more than 40 hours in 1 week, the formula changes to  $P = 40B + 1.5B(h - 40)$ . If Susan had base pay of \$12.50 and worked 46 hours, what would be her pay for the week?

- A \$525.00
- B \$575.00
- C \$597.00
- D \$612.50

2. The pay ( $P$ ) at a certain job is calculated by multiplying the base pay ( $B$ ) times the number of hours worked ( $h$ ) ( $P = Bh$ ). If a worker works more than 40 hours in 1 week, the formula changes to  $P = 40B + 1.5B(h - 40)$ . If Tom has base pay of \$6.35 and worked 28 hours, what would be his pay for the week?

- A \$ 175.00
- B \$ 177.80
- C \$ 186.50
- D \$ 266.70