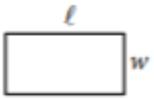
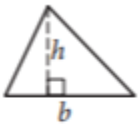
SAT Math Formula Sheet

$A = \pi r^2$

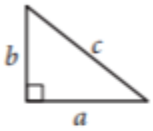
$C = 2\pi r$



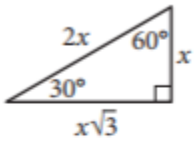
$A = \ell w$

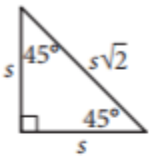


$A = \frac{1}{2}bh$

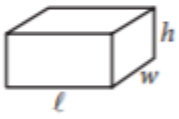


$c^2 = a^2 + b^2$





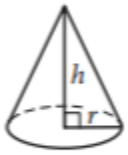
Special Right Triangles



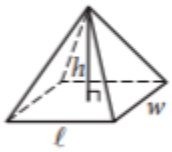
$V = \ell wh$

$V = \pi r^2 h$

$V = \frac{4}{3}\pi r^3$



$V = \frac{1}{3}\pi r^2 h$



$V = \frac{1}{3}\ell wh$

The number of degrees of arc in a circle is 360.

The number of radians of arc in a circle is 2π.

The sum of the measures in degrees of the angles of a triangle is 180.

NC Set #2 Part A

1. $$h = 3a + 28.6$$

A pediatrician uses the model above to estimate the height h of a boy, in inches, in terms of the boy's age a, in years, between the ages of 2 and 5. Based on the model, what is the estimated increase, in inches, of a boy's height each year?

A) 3

B) 5.7

C) 9.5

D) 14.3

2. $$(x^2y - 3y^2 + 5xy^2) - (-x^2y + 3xy^2 - 3y^2)$$

Which of the following is equivalent to the expression above?

A) $4x^2y^2$

B) $8xy^2 - 6y^2$

C) $2x^2y + 2xy^2$

D) $2x^2y + 8xy^2 - 6y^2$

3. A line in the xy-plane passes through the origin and has a slope of $\frac{1}{7}$. Which of the following points lies on the line?

A) (0,7)

B) (1,7)

C) (7,7)

D) (14,2)

4. If $(ax+2)(bx+7) = 15x^2 + cx + 14$ for all values of x, and $a+b=8$, what are the two possible values for c ?

A) 3 and 5
B) 6 and 35
C) 10 and 21
D) 31 and 41

5. In a right triangle, one angle measures $x°$, where $\sin x° = \frac{4}{5}$. What is $\cos(90° - x°)$?

NC Set #2 Part A Key

1. A

2. C

3. D

4. D

5. 4/5

NC Set #2 Part B

1.

$$3x + 4y = -23$$
$$2y - x = -19$$

What is the solution (x, y) to the system of equations above?

A) $(-5, -2)$

B) $(3, -8)$

C) $(4, -6)$

D) $(9, -6)$

2.

$$g(x) = ax^2 + 24$$

For the function g defined above, a is a constant and $g(4) = 8$. What is the value of $g(-4)$?

A) 8

B) 0

C) -1

D) -8

3.

$$b = 2.35 + 0.25x$$
$$c = 1.75 + 0.40x$$

In the equations above, b and c represent the price per pound, in dollars, of beef and chicken, respectively, x weeks after July 1 during last summer. What was the price per pound of beef when it was equal to the price per pound of chicken?

A) \$2.60

B) \$2.85

C) \$2.95

D) \$3.35

4. If $a = 5\sqrt{2}$ and $2a = \sqrt{2x}$, what is the value of x ?

5. If m < 0, find the value of m that satisfies $2m^2 - 5m = 3$

NC Set #2 Part B Key

1. B

2. A

3. D

4. 100

5. -1/2

NC Set #2 Part C

1. Which of the following is a solution to the system of equations below?

$4x - y = 7$

$2x + 3y = 21$

A) (5,3)

B) (3,5)

C) (0,4)

D) (3,7)

2. Which of the following is equivalent to the expression below?

$(a^2b + 2ab - 3b^2) - (2ab - 6b^2 + 5a^2b)$

A) $6a^2b - 9b^2$

B) $-4a^2b + 4ab + 3b^2$

C) $6a^2b + 4ab - 9b^2$

D) $-4a^2b + 3b^2$

3. $f(x) = bx^2 - 5$

For the function f above, if b is constant and f(2)=7, what is the value of f(-2)?

A) -7

B) -5

C) 5

D) 7

4. If $a = 2\sqrt{5}$ and $3a = \sqrt{30x}$, what is the value of x?

5. In a right triangle, where one acute angle measures x°, if cos(x°) = 2/3, what is sin(90-x)°?

NC Set #2 Part C Key

1. B

2. D

3. D

4. 6

5. 2/3