

# Pre-AP Precalculus

CR 4 – SAT PREP 4

\*\*\* w/OUT Calculator\*\*\*

Name: \_\_\_\_\_

Date: \_\_\_\_\_

1]

$$9a^4 + 12a^2b^2 + 4b^4$$

Which of the following is equivalent to the expression shown above?

- A)  $(3a^2 + 2b^2)^2$
- B)  $(3a + 2b)^4$
- C)  $(9a^2 + 4b^2)^2$
- D)  $(9a + 4b)^4$

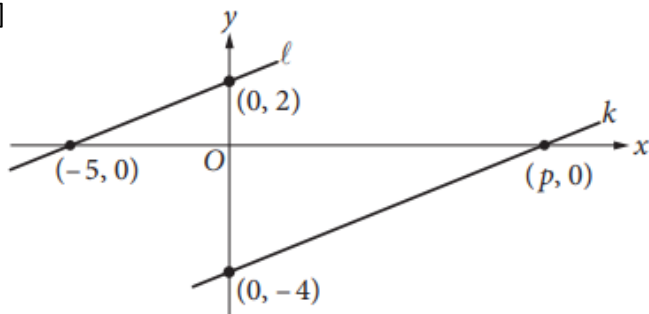
2]

$$\sqrt{2k^2 + 17} - x = 0$$

If  $k > 0$  and  $x = 7$  in the equation above, what is the value of  $k$  ?

- A) 2
- B) 3
- C) 4
- D) 5

3]



In the  $xy$ -plane above, line  $\ell$  is parallel to line  $k$ . What is the value of  $p$  ?

- A) 4
- B) 5
- C) 8
- D) 10

4]

$$nA = 360$$

The measure  $A$ , in degrees, of an exterior angle of a regular polygon is related to the number of sides,  $n$ , of the polygon by the formula above. If the measure of an exterior angle of a regular polygon is greater than  $50^\circ$ , what is the greatest number of sides it can have?

- A) 5
- B) 6
- C) 7
- D) 8

5]

Which of the following complex numbers is equivalent to  $\frac{3 - 5i}{8 + 2i}$  ? (Note:  $i = \sqrt{-1}$ )

- A)  $\frac{3}{8} - \frac{5i}{2}$
- B)  $\frac{3}{8} + \frac{5i}{2}$
- C)  $\frac{7}{34} - \frac{23i}{34}$
- D)  $\frac{7}{34} + \frac{23i}{34}$

6]

$$R = \frac{F}{N + F}$$

A website uses the formula above to calculate a seller's rating,  $R$ , based on the number of favorable reviews,  $F$ , and unfavorable reviews,  $N$ . Which of the following expresses the number of favorable reviews in terms of the other variables?

A)  $F = \frac{RN}{R - 1}$

B)  $F = \frac{RN}{1 - R}$

C)  $F = \frac{N}{1 - R}$

D)  $F = \frac{N}{R - 1}$

7] The expression  $\frac{5x - 2}{x + 3}$  is equivalent to which of the following?

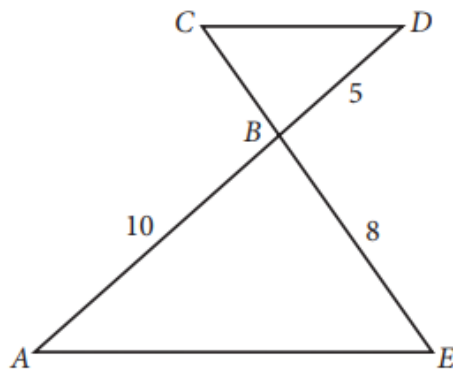
A)  $\frac{5 - 2}{3}$

B)  $5 - \frac{2}{3}$

C)  $5 - \frac{2}{x + 3}$

D)  $5 - \frac{17}{x + 3}$

8]

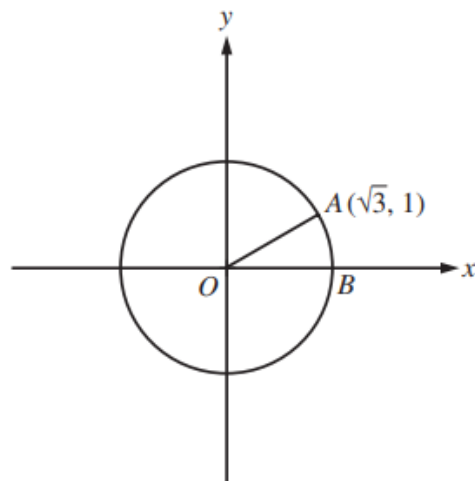


In the figure above,  $\overline{AE} \parallel \overline{CD}$  and segment  $AD$  intersects segment  $CE$  at  $B$ . What is the length of segment  $CE$ ?

9]

The sales manager of a company awarded a total of \$3000 in bonuses to the most productive salespeople. The bonuses were awarded in amounts of \$250 or \$750. If at least one \$250 bonus and at least one \$750 bonus were awarded, what is one possible number of \$250 bonuses awarded?

10]



In the  $xy$ -plane above,  $O$  is the center of the circle, and the measure of  $\angle AOB$  is  $\frac{\pi}{a}$  radians. What is the value of  $a$ ?