Name: _____ **Teacher:**_____ **Block:**_____

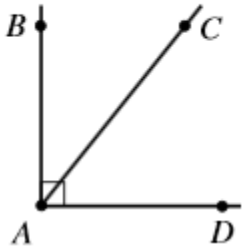
Titan Learning Center
Mathematics ACT Prep
Set A Week 6

Solve each problem, circling the correct answers. Remember that figures are not necessarily drawn to scale.

1. What is the product of the complex numbers $(-3i + 4)$ and $(3i + 4)$?

A. 1
B. 7
C. 25
D. $-7 + 24i$
E. $7 + 24i$

2. In the figure shown below, the measure of $\angle BAC$ is $(x + 20)°$ and the measure of $\angle BAD$ is $90°$. What is the measure of $\angle CAD$?



F. $(x - 70)°$
G. $(70 - x)°$
H. $(70 + x)°$
J. $(160 - x)°$
K. $(160 + x)°$

3. What fraction lies exactly halfway between $\frac{2}{3}$ and $\frac{3}{4}$?

F. $\frac{3}{5}$

G. $\frac{5}{6}$

H. $\frac{7}{12}$

J. $\frac{9}{16}$

K. $\frac{17}{24}$

4. To make a 750-piece jigsaw puzzle more challenging, a puzzle company includes 5 extra pieces in the box along with the 750 pieces, and those 5 extra pieces do not fit anywhere in the puzzle. If you buy such a puzzle box, break the seal on the box, and immediately select 1 piece at random, what is the probability that it will be 1 of the extra pieces?

A. $\frac{1}{5}$

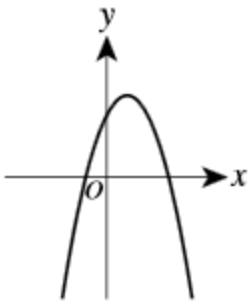
B. $\frac{1}{755}$

C. $\frac{1}{750}$

D. $\frac{5}{755}$

E. $\frac{5}{750}$

5. The equation $y = ax^2 + bx + c$ is graphed in the standard (x,y) coordinate plane below for real values of a, b, and c. When $y = 0$, which of the following best describes the solutions for x ?



F. 2 distinct positive real solutions
G. 2 distinct negative real solutions
H. 1 positive real solution and 1 negative real solution
J. 2 real solutions that are not distinct
K. 2 distinct solutions that are not real

TLC Stamp