

*A.A.5: Write algebraic equations or inequalities that represent a situation.*

1. 010915ia, P.I. A.A.5

Rhonda has \$1.35 in nickels and dimes in her pocket. If she has six more dimes than nickels, which equation can be used to determine  $x$ , the number of nickels she has?

[A]  $0.15(x + 6) = 1.35$

[B]  $0.05 + 0.10(6x) = 1.35$

[C]  $0.05x + 0.10(x + 6) = 1.35$

[D]  $0.05(x + 6) + 0.10x = 1.35$

2. 080627a, P.I. A.A.5

When Albert flips open his mathematics textbook, he notices that the product of the page numbers of the two facing pages that he sees is 156. Which equation could be used to find the page numbers that Albert is looking at?

[A]  $(x + 1) + (x + 2) = 156$

[B]  $(x + 1)(x + 3) = 156$

[C]  $x + (x + 1) = 156$       [D]  $x(x + 1) = 156$

3. 060425a, P.I. A.A.5

A farmer has a rectangular field that measures 100 feet by 150 feet. He plans to increase the area of the field by 20%. He will do this by increasing the length and width by the same amount,  $x$ . Which equation represents the area of the new field?

[A]  $2(100 + x) + 2(150 + x) = 15,000$

[B]  $(100 + 2x)(150 + x) = 18,000$

[C]  $(100 + x)(150 + x) = 18,000$

[D]  $(100 + x)(150 + x) = 15,000$

4. fall0726ia, P.I. A.A.5

The length of a rectangular window is 5 feet more than its width,  $w$ . The area of the window is 36 square feet. Which equation could be used to find the dimensions of the window?

[A]  $w^2 + 5w - 36 = 0$       [B]  $w^2 + 5w + 36 = 0$

[C]  $w^2 - 5w - 36 = 0$       [D]  $w^2 - 5w + 36 = 0$

5. 060821a, P.I. A.A.5

Students in a ninth grade class measured their heights,  $h$ , in centimeters. The height of the shortest student was 155 cm, and the height of the tallest student was 190 cm. Which inequality represents the range of heights?

[A]  $h \geq 155$  or  $h \leq 190$

[B]  $h > 155$  or  $h < 190$

[C]  $155 \leq h \leq 190$       [D]  $155 < h < 190$

6. fall0715ia, P.I. A.A.5

An electronics store sells DVD players and cordless telephones. The store makes a \$75 profit on the sale of each DVD player ( $d$ ) and a \$30 profit on the sale of each cordless telephone ( $c$ ). The store wants to make a profit of at least \$255.00 from its sales of DVD players and cordless phones. Which inequality describes this situation?

[A]  $75d + 30c < 255$       [B]  $75d + 30c \geq 255$

[C]  $75d + 30c \leq 255$       [D]  $75d + 30c > 255$

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[1] C

[2] D

[3] C

[4] A

[5] C

[6] B