

Intermediate Algebra 15% ~ about 9 out of 60

5. Leticia went into Discount Music to price CDs. All CDs were discounted 23% off the marked price. Leticia wanted to program her calculator so she could input the marked price and the discounted price would be the output. Which of the following is an expression for the discounted price on a marked price of p dollars?

- A. $p - 0.23p$
- B. $p - 0.23$
- C. $p - 23p$
- D. $p - 23$
- E. $0.23p$

Use an example, i.e. \$10

$$10 - 0.23(10) = \$7.70$$

$$p - 0.23p$$

\uparrow original price \uparrow discount amount

Coordinate Geometry 15% ~ about 9 out of 60

6. The slope of the line with equation $y = ax + b$ is greater than the slope of the line with equation $y = cx + b$. Which of the following statements *must* be true about the relationship between a and c ?

- F. $a \leq c$
- G. $a < c$
- H. $a = c$
- I. $a > c$
- K. $a \geq c + 1$

$$y = mx + b$$

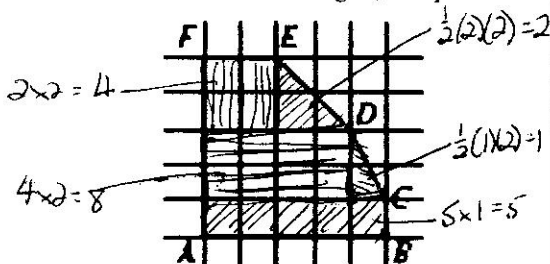
\uparrow
 m is the slope

greater $m =$ greater slope, therefore $a > c$

Plane Geometry 23% ~ about 14 out of 60

7. Hexagon $ABCDEF$ shown below was drawn on a grid with unit squares. Each vertex is at the intersection of 2 grid lines. What is the area of the hexagon, in square units?

- A. 18
- B. 19
- C. 20
- D. 22
- E. 25



Divide into segments and find individual areas to add up.

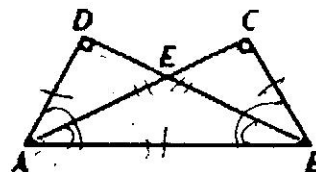
Area of a triangle = $\frac{1}{2}(\text{base})(\text{height})$

Area of rectangle = length \times width

$$4 + 8 + 5 + 1 + 2 = 20$$

8. In the figure below, \overline{AD} is perpendicular to \overline{BD} , \overline{AC} is perpendicular to \overline{BC} , and $\overline{AD} \cong \overline{BC}$. Which of the following congruences is NOT necessarily true?

- F. $\overline{AC} \cong \overline{BD}$
- G. $\overline{AD} \cong \overline{AE}$
- H. $\overline{AE} \cong \overline{BE}$
- J. $\angle DAB \cong \angle CBA$
- K. $\angle EAB \cong \angle EBA$



Since $\triangle ABD \cong \triangle BAC$, then all sides and angles must be congruent.

Since \overline{AD} and \overline{AE} are not on the two triangles they are not necessarily congruent.