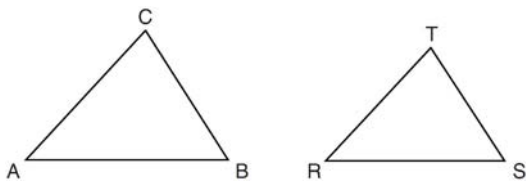


G.G.45: Similarity 1: Investigate, justify, and apply theorems about similar triangles

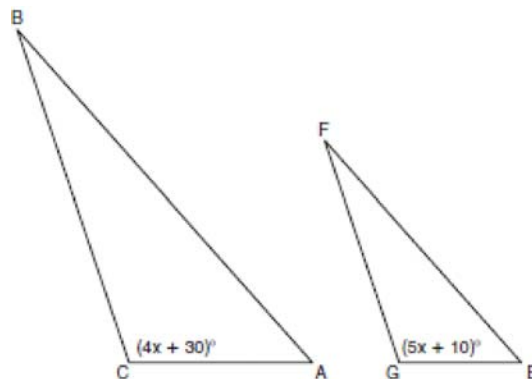
- 1 In the diagram below, $\triangle ABC \sim \triangle RST$.



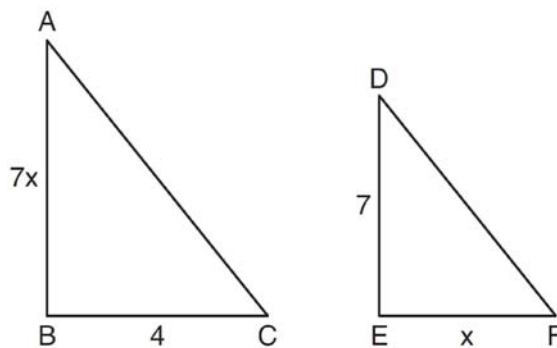
Which statement is *not* true?

- 1) $\angle A \cong \angle R$
 - 2) $\frac{AB}{RS} = \frac{BC}{ST}$
 - 3) $\frac{AB}{BC} = \frac{ST}{RS}$
 - 4) $\frac{AB + BC + AC}{RS + ST + RT} = \frac{AB}{RS}$
- 2 Scalene triangle ABC is similar to triangle DEF . Which statement is *false*?
- 1) $AB:BC=DE:EF$
 - 2) $AC:DF=BC:EF$
 - 3) $\angle ACB \cong \angle DFE$
 - 4) $\angle ABC \cong \angle EDF$
- 3 If $\triangle ABC \sim \triangle ZXY$, $m\angle A = 50$, and $m\angle C = 30$, what is $m\angle X$?
- 1) 30
 - 2) 50
 - 3) 80
 - 4) 100

- 4 In the diagram below, $\triangle ABC \sim \triangle EFG$, $m\angle C = 4x + 30$, and $m\angle G = 5x + 10$. Determine the value of x .



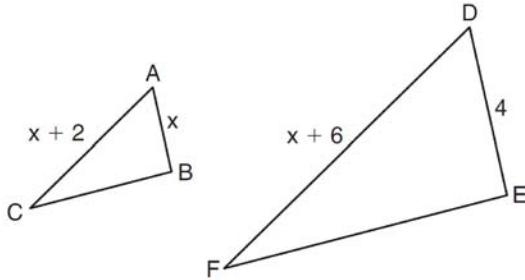
- 5 As shown in the diagram below, $\triangle ABC \sim \triangle DEF$, $AB = 7x$, $BC = 4$, $DE = 7$, and $EF = x$.



What is the length of \overline{AB} ?

- 1) 28
- 2) 2
- 3) 14
- 4) 4

- 6 In the diagram below, $\triangle ABC \sim \triangle DEF$, $DE = 4$, $AB = x$, $AC = x + 2$, and $DF = x + 6$. Determine the length of AB . [Only an algebraic solution can receive full credit.]



- 7 If $\triangle RST \sim \triangle ABC$, $m\angle A = x^2 - 8x$, $m\angle C = 4x - 5$, and $m\angle R = 5x + 30$, find $m\angle C$. [Only an algebraic solution can receive full credit.]

G.G.45: Similarity 1: Investigate, justify, and apply theorems about similar triangles
Answer Section

1 ANS: 3 REF: 061224ge

2 ANS: 4 REF: 081216ge

3 ANS: 4
 $180 - (50 + 30) = 100$

REF: 081006ge

4 ANS:
 $20. 5x + 10 = 4x + 30$
 $x = 20$

REF: 060934ge

5 ANS: 3
 $\frac{7x}{4} = \frac{7}{x}. 7(2) = 14$

$7x^2 = 28$
 $x = 2$

REF: 061120ge

6 ANS:
 $2 \quad \frac{x+2}{x} = \frac{x+6}{4}$
 $x^2 + 6x = 4x + 8$
 $x^2 + 2x - 8 = 0$
 $(x+4)(x-2) = 0$
 $x = 2$

REF: 081137ge

7 ANS:
 $x^2 - 8x = 5x + 30. m\angle C = 4(15) - 5 = 55$
 $x^2 - 13x - 30 = 0$
 $(x-15)(x+2) = 0$
 $x = 15$

REF: 061337ge