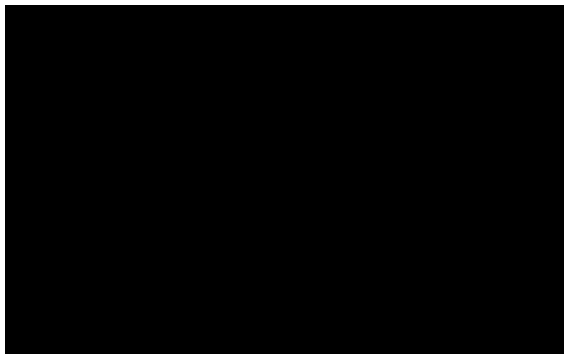


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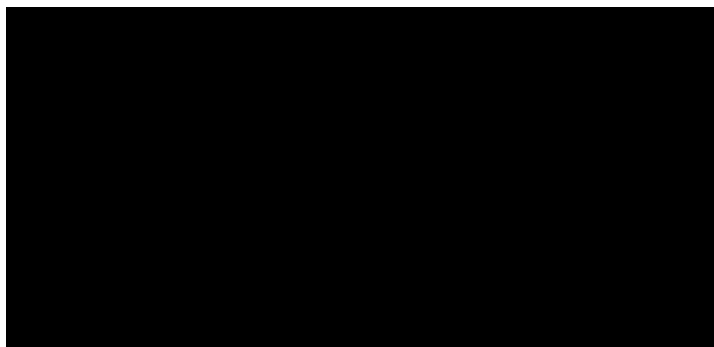
Similarity Test

1. Base your answer to the following question on 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 AC ?

- (1) 28 (2) 4 (3) 2 **(4) 14**
2. In triangle ABC and DEF , $AB = 4$, $AC = 5$, $DE = 8$, $DF = 10$, and $\angle A \cong \angle D$. Which method could be used to prove $\triangle ABC \sim \triangle DEF$?
- (1) SSS (2) AA **(3) SAS** (4) ASA
3. The coordinates of the vertices of a triangle are (1,1), (3,1), and (3,5). The triangle formed is
- (1) an equilateral triangle (2) an isosceles triangle
(3) a right triangle (4) an obtuse triangle
4. If two angles of one triangle are congruent to two angles of another triangle, then how *must the* triangles be described?
- (1) scalene (2) isosceles **(3) similar** (4) congruent
5. In the diagram of $\triangle ABC$ and $\triangle ADE$ shown below, $\angle B \cong \angle D$.



If $AB = 10$, $AD = 8$, and $AE = 12$, what is the length of AC ?

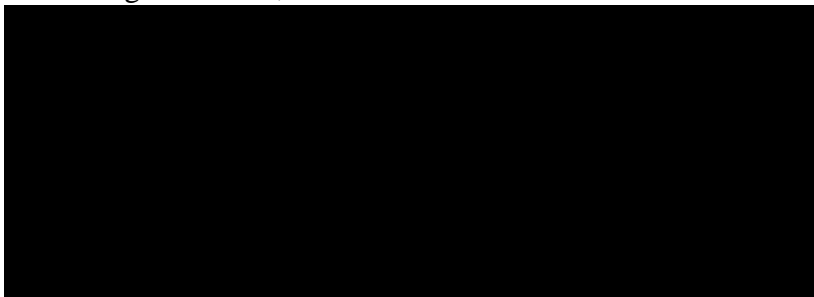
- (1) 6 (2) 2 **(3) 3** (4) 15

6. In the diagram below, and intersect at T , is drawn, and .



Which technique can be used to prove $PST \cong RQT$?

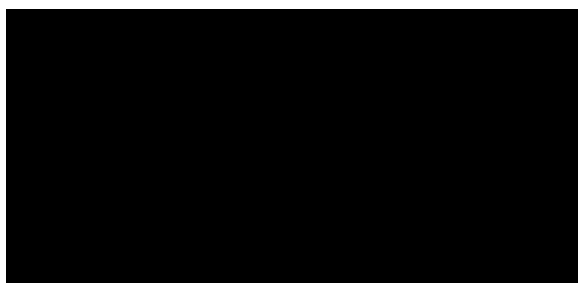
- (1) SSS (2) AA (3) ASA (4) SAS
7. In right triangle ABC , angle C is the right angle.
If the coordinates of A are $(-1,1)$ and the coordinates of B are $(4,-2)$, the coordinates of C may be
- (1) $(-1,2)$ (2) $(1,-2)$ (3) **$(-1,-2)$** (4) $(1,2)$
8. In the diagram below, .



Which statement is *not* true?

- (1) (2) **(2)**
- (3) (4) **(4)**

9. In the diagram of _____ below, _____, _____, _____, and _____.



What is the length of \vec{r} ?

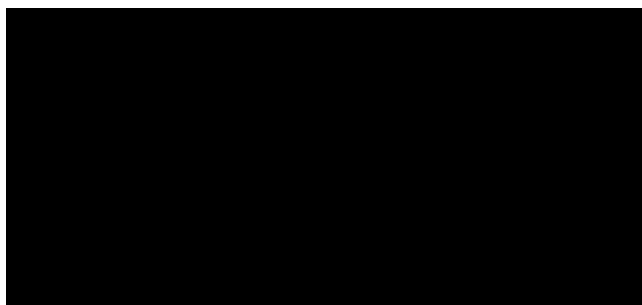
- (1) 12 **(2) 10** (3) 8 (4) 4

10. Two triangles are similar, and the ratio of each pair of corresponding sides is 2 :

1. Which statement regarding the two triangles is *not* true?

- (1) Their perimeters have a ratio of 2 : 1.
- (2) Their altitudes have a ratio of 2 : 1.
- (3) Their areas have a ratio of 4 : 1.
- (4) Their corresponding angles have a ratio of 2 : 1.**

11. In the diagram of ABC and EDC below, $AB \parallel ED$ and $AC \parallel EC$, and AC and EC intersect at C , and $\angle CAB = 30^\circ$ and $\angle CED = 40^\circ$.



Which method can be used to show that ABC must be similar to EDC ?

- (1) HL (2) SSS (3) AA (4) SAS

12. In $\triangle ABC$ and $\triangle DEF$, $\angle A = \angle D$. Which additional information would prove $\triangle ABC \cong \triangle DEF$?

- (1) $AC = DF$

(3) $\angle BAC \cong \angle EDF$

(2) $CB = FE$

(4) $\angle ACB \cong \angle DFE$

13. The vertices of rectangle $ABCD$ are $A(3,1)$, $B(-5,1)$, $C(-5,-3)$, and D . What are the coordinates of D ?

- (1) (3,-3) (2) (-3,-3) (3) (3,3) (4) (-3,3)

14. When two parallel lines are cut by a transversal, which angles are *not* always congruent?

- (1) a pair of alternate interior angles
- (2) a pair of alternate exterior angles
- (3) two corresponding angles
- (4) two interior angles on the same side of the transversal**

15. Triangle ABC is similar to triangle DEF . The lengths of the sides of ABC are 5, 8, and 11. What is the length of the shortest side of DEF if its perimeter is 60?

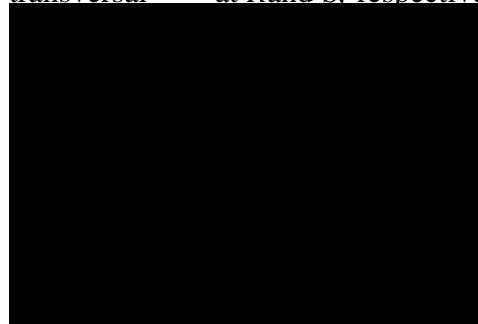
- (1) 10
- (2) 12.5**
- (3) 20
- (4) 27.5

16. Triangle PQT with  is shown below.

If $PR = 12$, $RQ = 8$, $PS = 21$, what is the length of QS ?

- (1) 14
- (2) 17
- (3) 35**
- (4) 38

17. In the accompanying diagram, parallel lines l and m are intersected by transversal p at R and S , respectively. If $m\angle BRS = 110$, find $m\angle RSD$.

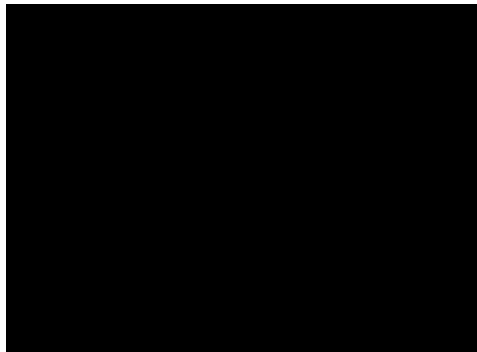


- (1) 85
- (2) 65
- (3) 110
- (4) 70**

18. In $\triangle ABC$, point D is on AB , and point E is on AC such that $DE \parallel BC$. If $DB = 2$, $DA = 7$, and $DE = 3$, what is the length of BC ?

(1) 8 (2) **13.5** (3) 10.5 (4) 9

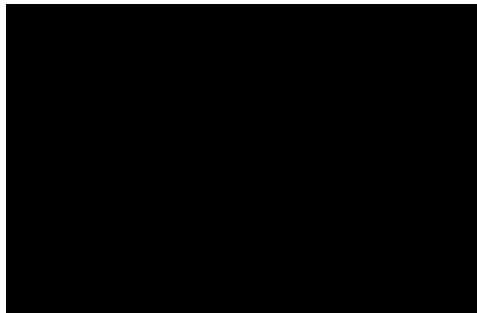
19. Base your answer to the following question on In the accompanying diagram, E is the midpoint of AC and $BE \parallel AD$.



Triangle AEC can be proved congruent to triangle BED by

- (1) ASA ASA (2) SAS SAS
(3) SSS SSS (4) AAS AAS

20. Base your answer to the following question on In the accompanying diagram of parallelogram $ORST$, the coordinates of vertices O , R , and T are $(0,0)$, $(3,5)$, and $(10,0)$, respectively.



What are the coordinates of vertex S ?

- (1) $(10,5)$ (2) $(7,5)$ (3) $(13,0)$ (4) **$(13,5)$**

21. What is the length of a line segment whose endpoints have coordinates $(5,3)$ and $(1,6)$?

(1) **5** (2) 25 (3) (4)

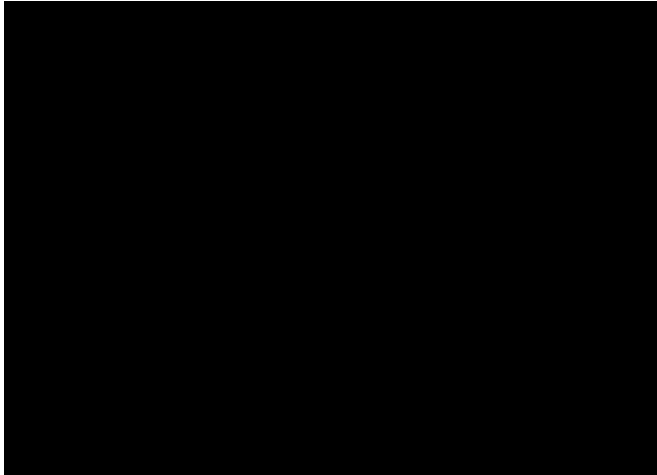
22. The endpoints of \overline{CD} are $C(-2,4)$ and $D(6,2)$. What are the coordinates of the midpoint of \overline{CD} ?

(1) $(4, 3)$ (2) $(4, -2)$ (3) **$(2, 3)$** (4) $(2, -1)$

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Similarity Test

23. In the diagram below, transversal _____ intersects _____ and _____ at V and W , respectively.



If _____ and _____, for which value of x is _____?

- (1) 6 (2) **16** (3) 24 (4) 28

24. When a quadrilateral is reflected over the line $y = x$, which geometric relationship is *not* preserved?

- (1) congruence (2) perpendicularity
(3) parallelism (4) **orientation**