Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_

Mr. Schlansky Geometry

***Triangles/Parallel Lines Cut By a Transversal Regents Review***

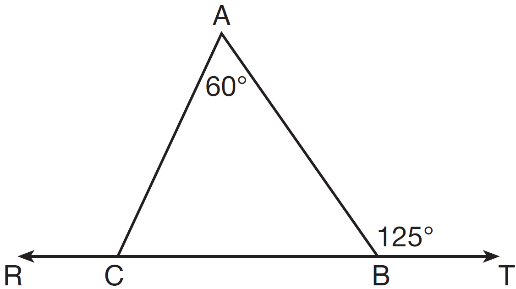
1. In , , , and . Which type of triangle is ?

|  |  |
| --- | --- |
| 1) | right |
| 2) | scalene |
| 3) | isosceles |
| 4) | equilateral |

2. Triangle *PQR* has angles in the ratio of . Which type of triangle is ?

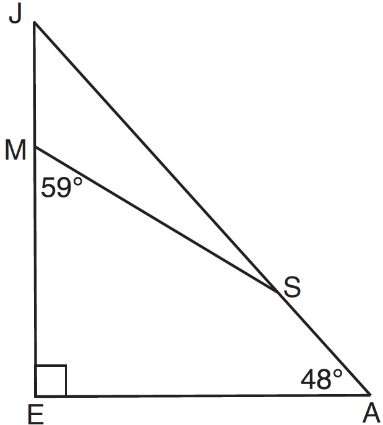
|  |  |
| --- | --- |
| 1) | acute |
| 2) | isosceles |
| 3) | obtuse |
| 4) | right |

3. In the diagram below,  and  are shown with  and .



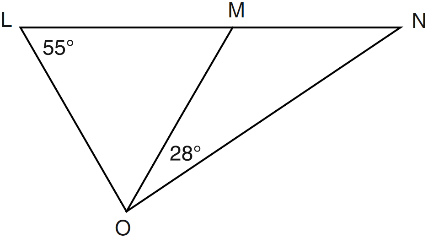
What is ?

|  |  |
| --- | --- |
| 1) | 125 |
| 2) | 115 |
| 3) | 65 |
| 4) | 55 |

 4. In the diagram of  below,  and . Line segment *MS* connects points *M* and *S* on the triangle, such that .

What is ?

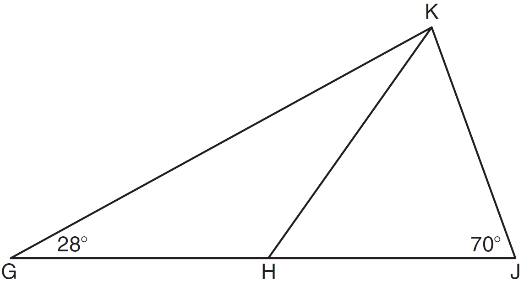
|  |  |
| --- | --- |
| 1) | 163 |
| 2) | 121 |
| 3) | 42 |
| 4) | 17 |

 5. In the diagram below,  is isosceles with .

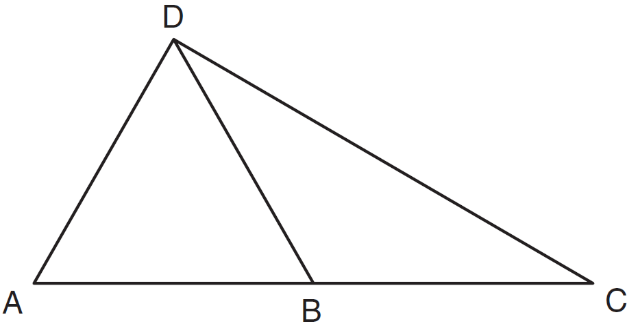
If  and , what is ?

|  |  |
| --- | --- |
| 1) | 27 |
| 2) | 28 |
| 3) | 42 |
| 4) | 70 |

6. In the diagram below of *,* *H* is a point on , , , and . Determine whether  is an isosceles triangle and justify your answer.



7. In the diagram below of *,* *B* is a point on  such that  is an equilateral triangle, and  is an isosceles triangle with . Find .



8. Fill in the boxes with "inside" or "outside" or “on”

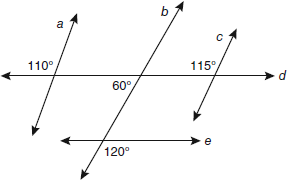
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Point of Concurrency | Acute | Right | Obtuse |
| Intersection of Altitudes |  |  |  |  |
| Intersection of Medians |  |  |  |  |
| Intersection of Perpendicular Bisectors |  |  |  |  |
| Intersection of Angle Bisectors |  |  |  |  |

9. For a triangle, which two points of concurrence could be located outside the triangle?

|  |  |
| --- | --- |
| 1) | incenter and centroid |
| 2) | centroid and orthocenter |
| 3) | incenter and circumcenter |
| 4) | circumcenter and orthocenter |

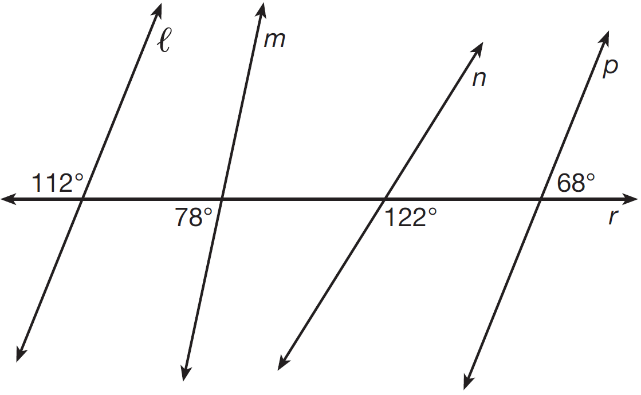
10. In which triangle do the three altitudes intersect outside the triangle?

|  |  |  |  |
| --- | --- | --- | --- |
| 1) | a right triangle | 3) | an obtuse triangle |
| 2) | an acute triangle | 4) | an equilateral triangle |

1. Based on the diagram below, which statement is true?

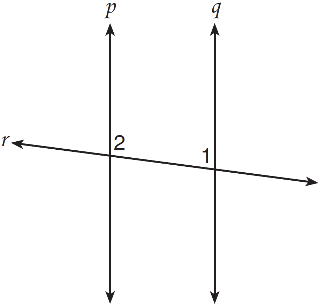
|  |  |  |  |
| --- | --- | --- | --- |
| 1) |  | 3) |  |
| 2) |  | 4) |  |

1. In the diagram below, lines , *m*, *n*, and *p* intersect line *r*.



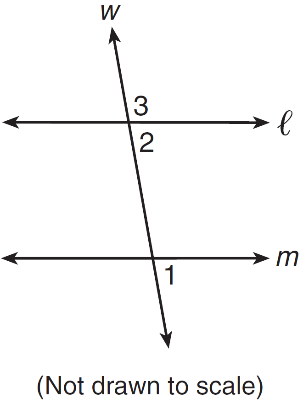
Which statement is true?

|  |  |
| --- | --- |
| 1) |  |
| 2) |  |
| 3) |  |
| 4) |  |

 13. Lines *p* and *q* are intersected by line *r*, as shown below.

If  and , for which value of *x* would ?

|  |  |
| --- | --- |
| 1) | 17 |
| 2) | 24 |
| 3) | 83 |
| 4) | 97 |

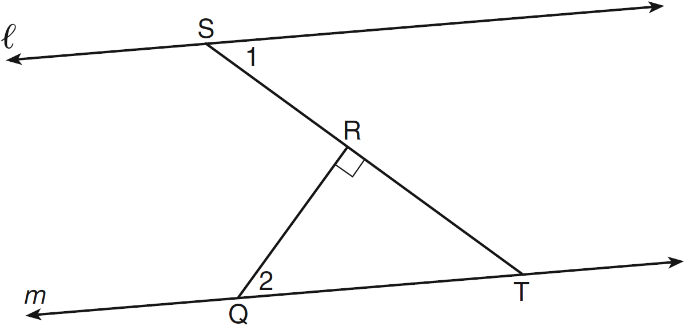
14. In the diagram below, line is parallel to line *m,* and

line *w* is a transversal.

If ** and **, what is ?

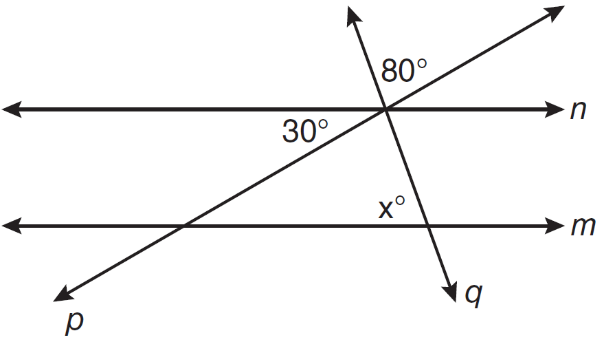
|  |  |
| --- | --- |
| 1) | 19 |
| 2) | 23 |
| 3) | 74 |
| 4) | 86 |

1. In the diagram below,  and  at *R*.



If , find . Explain how you arrived at your answer.

1. In the diagram below, lines *n* and *m* are cut by transversals *p* and *q*.



What value of *x* would make lines *n* and *m* parallel? Explain why that value would make the lines parallel.