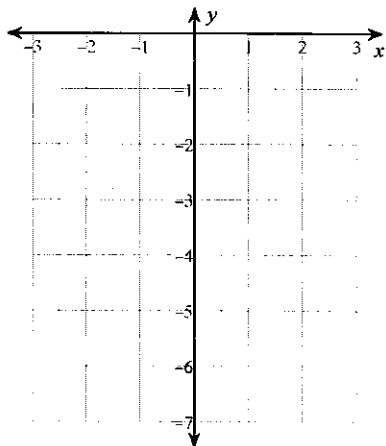
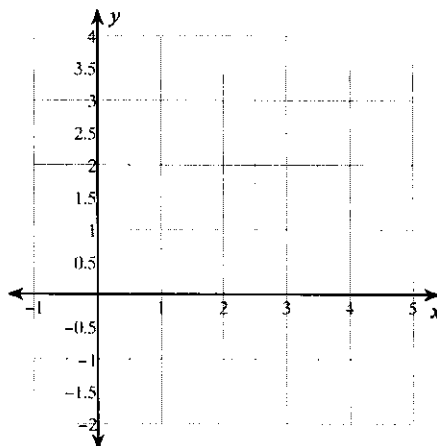


Sketch the graph of each function.

1) $y > -x^2 + 2x - 3$



2) $y < x^2 - 4x + 3$



Factor each completely.

3) $n^2 - n - 12$

4) $x^2 - 6x - 40$

5) $9v^2 + 47v - 42$

6) $6n^2 + 8n$

7) $4x^2 - 1$

8) $25x^2 - 30x + 9$

Solve each equation by taking square roots. Leave answer in radical form, if needed.

9) $10p^2 - 1 = 779$

10) $6p^2 - 3 = 309$

Solve each equation by factoring. If answers are a fraction, leave in simplest form.

11) $3p^2 - 40 = -19p$

12) $3b^2 = -2b$

Solve each equation by completing the square.

13) $a^2 + 14a + 54 = 9$

14) $p^2 - 16p - 70 = 10$

Solve each equation with the quadratic formula. Remember negatives under the radical can be simplified!

15) $5x^2 = -4 - 6x$

16) $5p^2 + 12p = -4$

Find the discriminant of each quadratic equation then state the number and type of solutions.

17) $8x^2 + 5x + 16 = 10$

18) $m^2 - 6m + 18 = 9$

19) $-4x^2 - x - 4 = -4$

20) $4p^2 + 8p + 1 = 7$

Simplify.

21) $3 + 4i - (-7 + 7i)$

22) $2i \cdot 3i + 3i(4 - 3i)$

23) $2i - 2 - 4 + 2i$

24) $-3(4 + 4i) - 2 \cdot 3i$

25) $\frac{-2}{-6i}$

26) $\frac{7}{-10i}$

27) $\frac{3}{9+5i}$

28) $\frac{2-5i}{-10-5i}$

29) $\sqrt{45n^4}$

30) $\sqrt{128r^3}$

31) $\sqrt{32p^2}$

32) $\sqrt[3]{64k^8}$

33) $3\sqrt{2} - \sqrt{8} - 3\sqrt{8}$

34) $-\sqrt{27} - 3\sqrt{8} + 3\sqrt{12}$

35) $\sqrt{5}(-2\sqrt{3} + \sqrt{2})$

36) $(\sqrt{3} + \sqrt{5})(4\sqrt{3} - \sqrt{4})$

37) $\frac{\sqrt{15}}{\sqrt{48}}$

38) $\frac{2}{5\sqrt{3} + \sqrt{2}}$

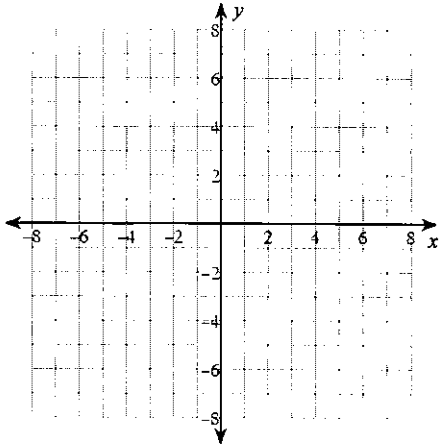
Solve each equation. Remember to check for extraneous solutions.

39) $-80 = -8\sqrt{\frac{x}{9}}$

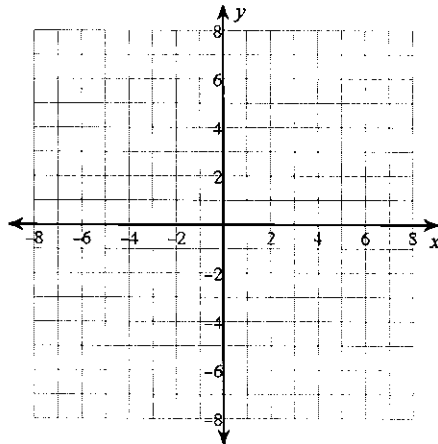
40) $\sqrt{-1-5x} = \sqrt{3x+7}$

Sketch the graph of each function.

41) $y = \sqrt{x + 5}$



42) $y = \frac{4}{5}\sqrt{x + 5} + 2$



Find the probability.

43) You roll a fair six-sided die twice. The first roll shows a one and the second roll shows a five.

44) A basket contains four apples and four peaches. You randomly select one piece of fruit and eat it. Then you randomly select another piece of fruit. Both pieces of fruit are apples.

45) You flip a coin twice. The first flip lands tails-up and the second flip lands heads-up.

46) You select a card from a standard shuffled deck of 52 cards. You return the card, shuffle, and then select another card. Both times the card is a diamond. (Note that 13 of the 52 cards are diamonds.)

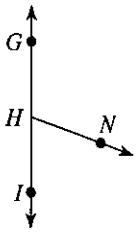
Determine if events A and B are independent.

47) $P(A) = \frac{11}{20}$ $P(B) = \frac{1}{4}$ $P(A \text{ and } B) = \frac{33}{400}$

48) $P(A) = \frac{7}{20}$ $P(B) = \frac{1}{5}$ $P(A \text{ and } B) = \frac{7}{100}$

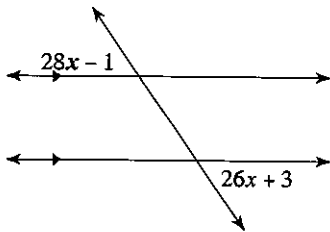
Geometry

- 1) $m\angle NHI = 7x - 7$, $m\angle GHI = 180^\circ$,
and $m\angle GHN = 10x$. Find x .

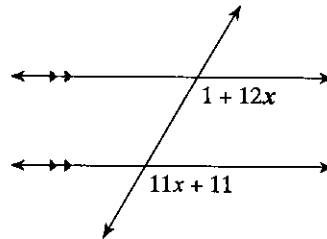


Solve for x , then find the angle measure for the missing angles.

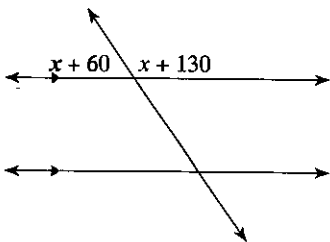
2)



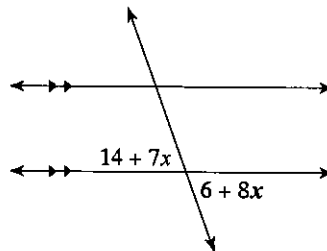
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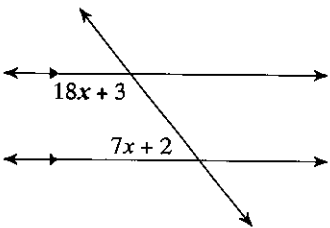
4)



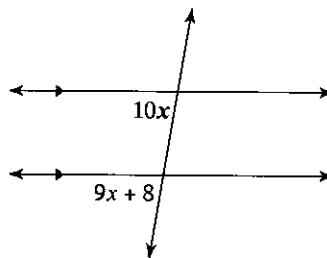
5)



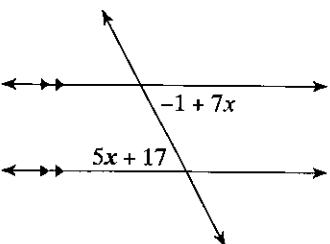
6)



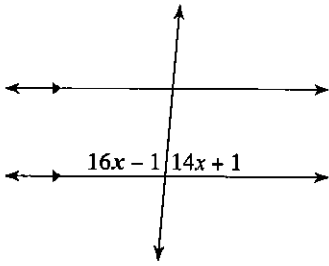
7)



8)

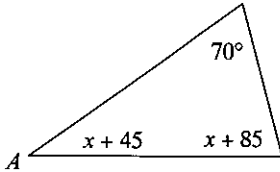


9)

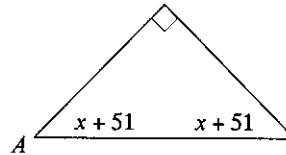


Find the measure of angle A.

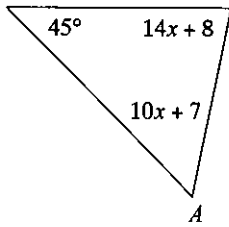
10)



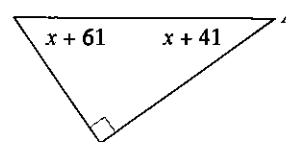
11)



12)



13)



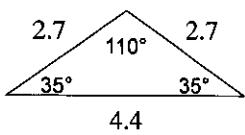
State if the three numbers can be the measures of the sides of a triangle. (Remember the two smaller sides have to add to be greater than the largest side to make a triangle).

14) 12, 3, 7

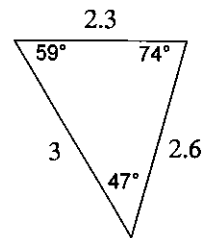
15) 20, 10, 10

Classify each triangle by its angles and sides.

16)

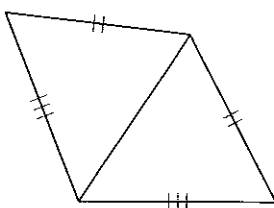


17)

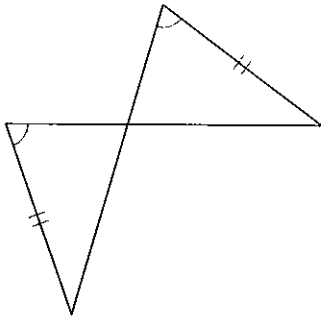


State if the two triangles are congruent. If they are, state how you know.

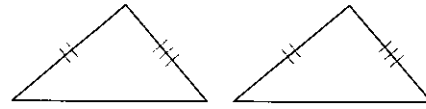
18)



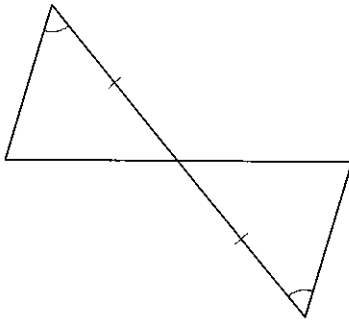
19)



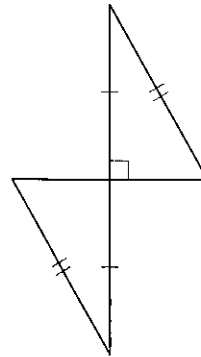
20)



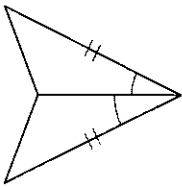
21)



22)

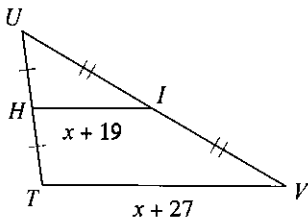


23)

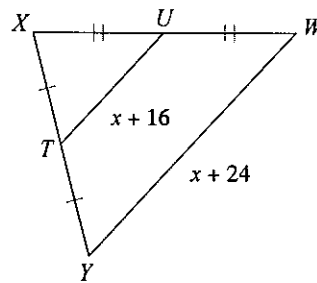


Find the missing length indicated.

24) Find TV



25) Find TU



Find the midpoint of the line segment with the given endpoints.

26) $(-4, -8), (-3, 3)$

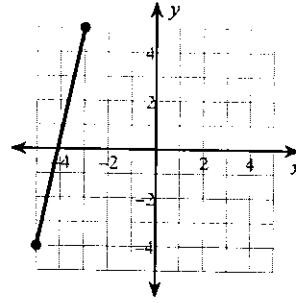
Find the other endpoint of the line segment with the given endpoint and midpoint.

27) Endpoint: $(9, -10)$, midpoint: $(6, 2)$

Find the distance between each pair of points.

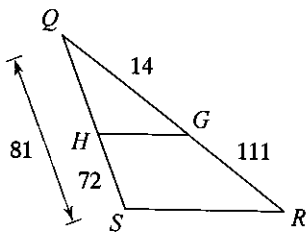
28) $(-3, -7), (3, 4)$

29)



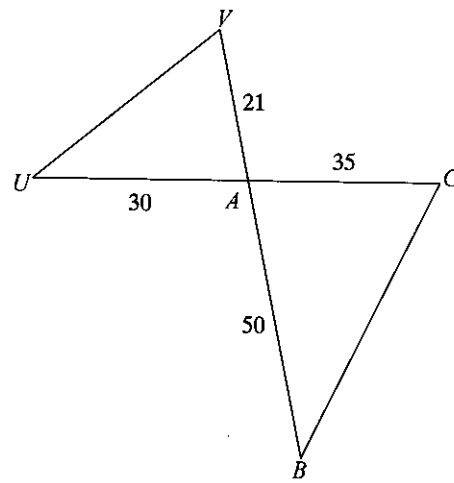
State if the triangles in each pair are similar. If so, state how you know they are similar and complete the similarity statement. (SSS~, SAS~, AA~)

30)



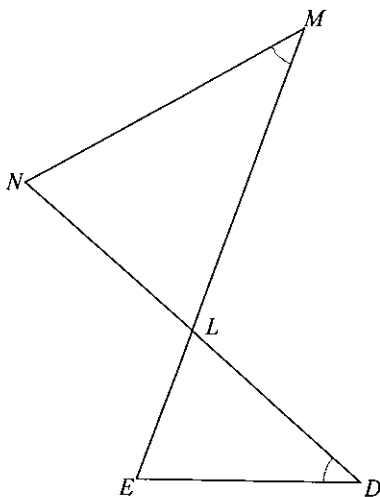
$\triangle QRS \sim$ _____

31)



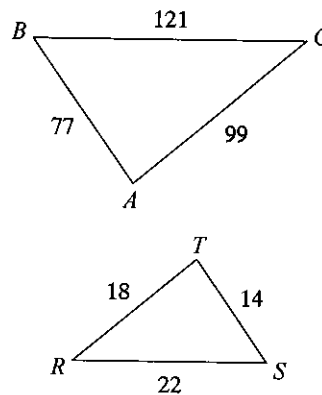
$\triangle ABC \sim$ _____

32)



$\triangle LMN \sim$ _____

33)



$\triangle ABC \sim$ _____