

Snow Day Packet

Geometry

Mrs. Bossie

Day 1: Use the Pythagorean Theorem to calculate the length of the hypotenuse of each triangle.

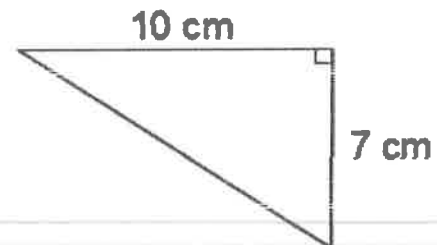
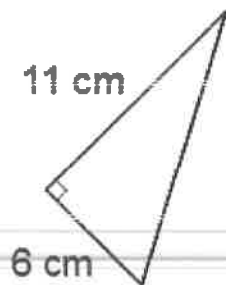
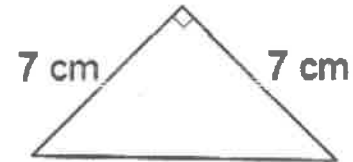
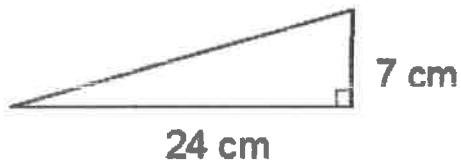
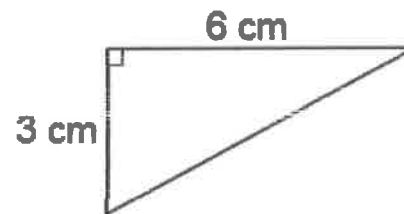
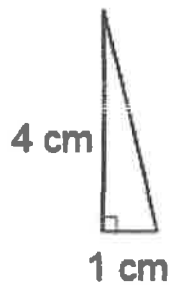
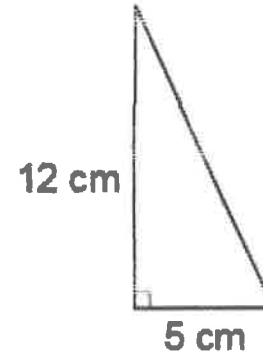
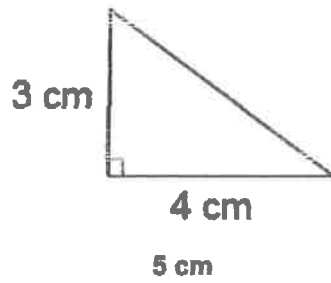
Day 2: The Midpoint Formula. Find the midpoint of each line segment on page 1 and at the top of page 2. Then find the missing endpoint when given the Midpoint and the other endpoint. Finally, try the critical thinking questions.

Day 3: The Distance Formula: For questions 1 – 6 and 13 – 18, you will need to write the coordinates of each line segment on each graph. Use the coordinates to find the lengths of each segment. Questions 7 – 12 and 19 – 24 give you the points. Finally try the critical thinking problems, numbers 25 and 26.

Day 4: Use the Angle Addition Postulate to find the missing measures. Remember, this is like the segment addition postulate. “The whole is equal to the sum of its parts.”

Day 5: Simplifying Square Roots. For these problems, you will need to find the prime factors. For example #1 $\sqrt{96}$. The prime factors of 96 are 2, 2, 2, 2, 2, 3 or 16 (6). $\sqrt{16}\sqrt{6}$ is $4\sqrt{6}$. Complete all 24 problems.

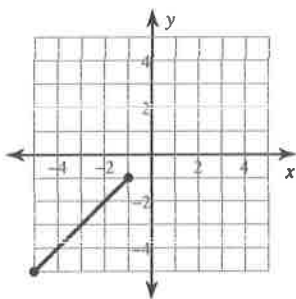
Calculate and write the missing length for each of the right-angle triangles below. Round to two decimal places where necessary. The first one is done for you.



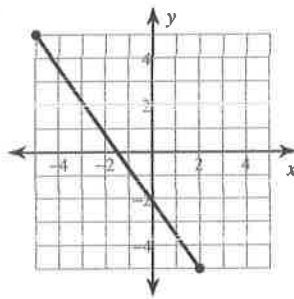
The Midpoint Formula

Find the midpoint of each line segment.

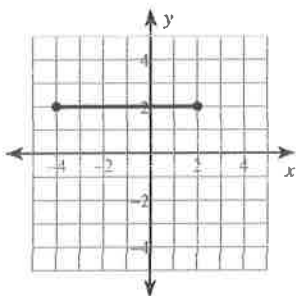
1)



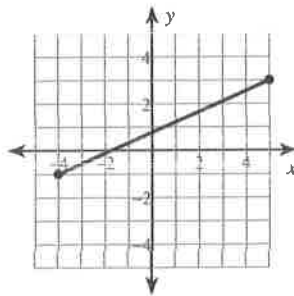
2)



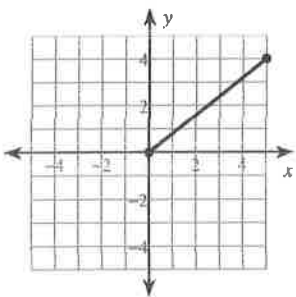
3)



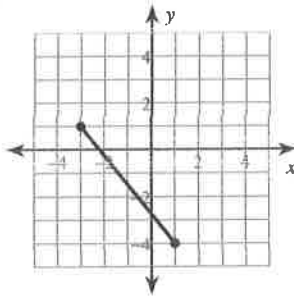
4)



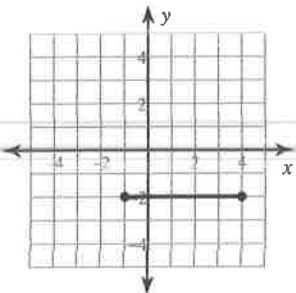
5)



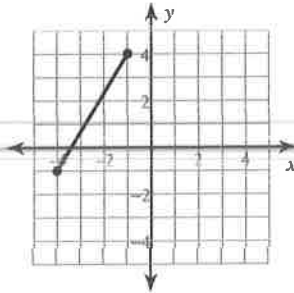
6)



7)



8)



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

9) $(-4, 4)$, $(5, -1)$

10) $(-1, -6)$, $(-6, 5)$

11) $(2, 4)$, $(1, -3)$

12) $(-4, 4)$, $(-2, 2)$

13) $(5, 2)$, $(-4, -3)$

14) $(-1, 1)$, $(5, -5)$

15) $(2, -1)$, $(-6, 0)$

16) $(-3.1, -2.8)$, $(-4.92, -3.3)$

17) $(-5.1, -2)$, $(1.4, 1.7)$

18) $(4.9, -1.3)$, $(-5.2, -0.6)$

19) $(5.1, 5.71)$, $(6, 3.6)$

20) $(3.1, -2.1)$, $(-0.52, -0.6)$

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

21) Endpoint: $(-1, 9)$, midpoint: $(-9, -10)$

22) Endpoint: $(2, 5)$, midpoint: $(5, 1)$

23) Endpoint: $(5, 2)$, midpoint: $(-10, -2)$

24) Endpoint: $(9, -10)$, midpoint: $(4, 8)$

25) Endpoint: $(-9, 7)$, midpoint: $(10, -3)$

26) Endpoint: $(-6, 4)$, midpoint: $(4, 8)$

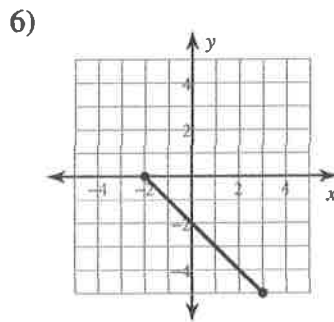
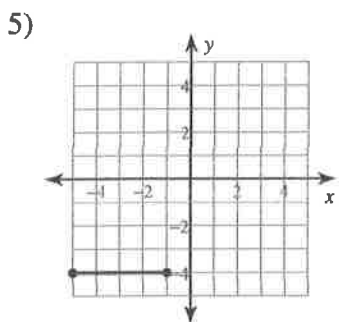
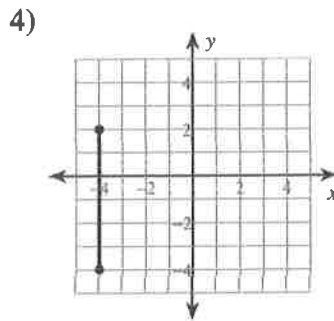
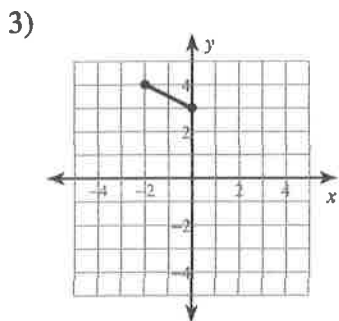
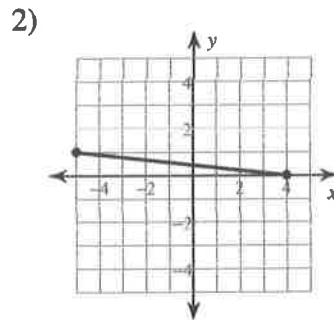
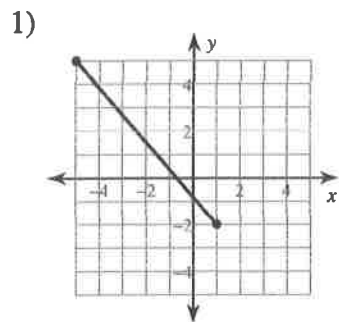
Critical thinking questions:

27) Find the point that is one-fourth of the way from $(2, 4)$ to $(10, 8)$.

28) One endpoint of a line segment is $(8, -1)$. The point $(5, -2)$ is one-third of the way from that endpoint to the other endpoint. Find the other endpoint.

The Distance Formula

Find the distance between each pair of points. Round your answer to the nearest tenth, if necessary.



7) $(-2, 3), (-7, -7)$

8) $(2, -9), (-1, 4)$

9) $(5, 9), (-7, -7)$

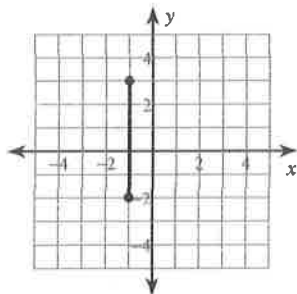
10) $(8, 5), (-1, 3)$

11) $(-10, -7), (-8, 1)$

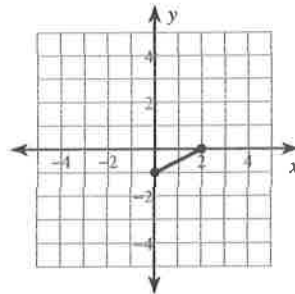
12) $(-6, -10), (-2, -10)$

Find the distance between each pair of points.

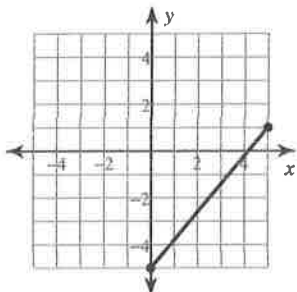
13)



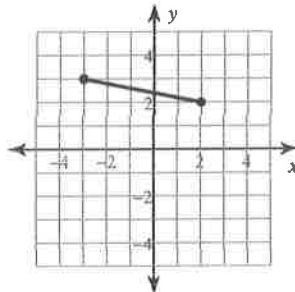
14)



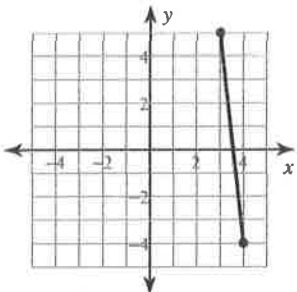
15)



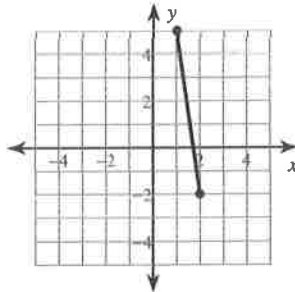
16)



17)



18)



19) $(0, -2), (-5, -1)$

20) $(6, 4), (-5, -1)$

21) $(3, 8), (9, 10)$

22) $(10, 1), (9, -4)$

23) $(-8, 10), (-6, 7)$

24) $(-5, 6), (8, -4)$

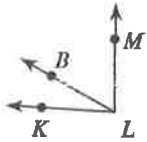
Critical thinking questions:

25) Name a point that is $\sqrt{2}$ away from $(-1, 5)$.

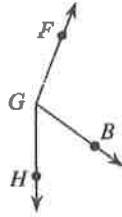
26) Name a point that is between 50 and 60 units away from $(7, -2)$ and state the distance between the two points.

The Angle Addition Postulate

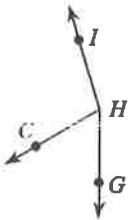
- 1) Find $m\angle KLM$ if $m\angle KLB = 26^\circ$
and $m\angle BLM = 60^\circ$.



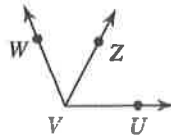
- 2) Find $m\angle FGH$ if $m\angle FGB = 105^\circ$
and $m\angle BGH = 54^\circ$.



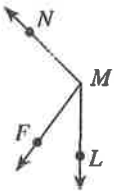
- 3) $m\angle GHC = 60^\circ$ and $m\angle CHI = 104^\circ$.
Find $m\angle GHI$.



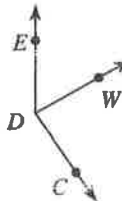
- 4) Find $m\angle WVU$ if $m\angle ZVU = 62^\circ$
and $m\angle WVZ = 50^\circ$.



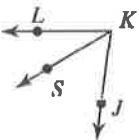
- 5) $m\angle FMN = 99^\circ$ and $m\angle LMF = 36^\circ$.
Find $m\angle LMN$.



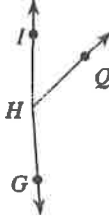
- 6) Find $m\angle WDC$ if $m\angle EDC = 145^\circ$
and $m\angle EDW = 61^\circ$.



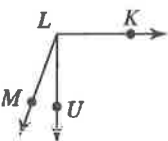
- 7) Find $m\angle JKL$ if $m\angle SKL = 31^\circ$
and $m\angle JKS = 52^\circ$.



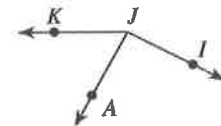
- 8) Find $m\angle IHQ$ if $m\angle IHG = 176^\circ$
and $m\angle QHG = 130^\circ$.



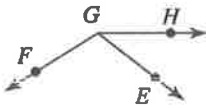
- 9) Find $m\angle KLU$ if $m\angle ULM = 20^\circ$
and $m\angle KLM = 110^\circ$.



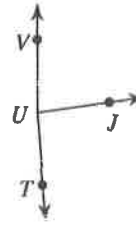
- 10) Find $m\angle IJA$ if $m\angle AJK = 61^\circ$
and $m\angle IJK = 153^\circ$.



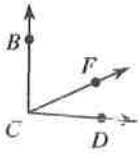
- 11) $m\angle HGF = 16x + 4$, $m\angle EGF = 110^\circ$,
and $m\angle IIGE = 3x + 11$. Find x .



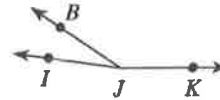
- 12) $m\angle VUT = 175^\circ$, $m\angle VUJ = 17x - 3$,
and $m\angle JUT = 17x + 8$. Find x .



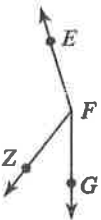
- 13) $m\angle FCD = x + 41$, $m\angle BCF = x + 78$,
and $m\angle BCD = 95^\circ$. Find x .



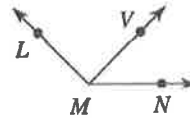
- 14) Find x if $m\angle BJK = 146 + 2x$,
 $m\angle IJK = 172^\circ$, and $m\angle IJB = 2x + 26$.



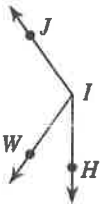
- 15) $m\angle GFZ = 38^\circ$, $m\angle ZFE = 2x + 125$,
and $m\angle GFE = x + 163$. Find x .



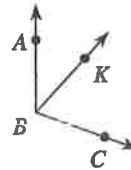
- 16) Find x if $m\angle LMN = 135^\circ$,
 $m\angle LMV = -1 + 45x$, and $m\angle VMN = 23x$.



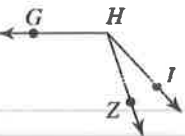
- 17) Find $m\angle HIW$ if $m\angle WIJ = 10x$,
 $m\angle HIJ = 145^\circ$, and $m\angle HIW = 2x + 13$.



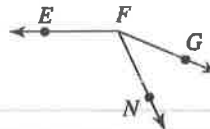
- 18) $m\angle ABC = 17x + 8$, $m\angle ABK = 42^\circ$,
and $m\angle KBC = 12x - 4$. Find $m\angle ABC$.



- 19) $m\angle ZHG = 11x - 1$, $m\angle IHZ = 24^\circ$,
and $m\angle IHG = 12x + 13$. Find $m\angle IHG$.



- 20) $m\angle GFN = 4x + 10$, $m\angle NFE = 14x + 3$,
and $m\angle GFE = 157^\circ$. Find $m\angle NFE$.



Simplifying Square Roots

Simplify.

1) $\sqrt{96}$

2) $\sqrt{216}$

3) $\sqrt{98}$

4) $\sqrt{18}$

5) $\sqrt{72}$

6) $\sqrt{144}$

7) $\sqrt{45}$

8) $\sqrt{175}$

9) $\sqrt{343}$

10) $\sqrt{12}$

11) $10\sqrt{96}$

12) $9\sqrt{245}$

$$13) 7\sqrt{600}$$

$$14) 5\sqrt{45}$$

$$15) 5\sqrt{180}$$

$$16) 3\sqrt{405}$$

$$17) 2\sqrt{36}$$

$$18) 9\sqrt{125}$$

$$19) 8\sqrt{27}$$

$$20) 12\sqrt{1764}$$

$$21) 3\sqrt{900}$$

$$22) 7\sqrt{2535}$$

$$23) 11\sqrt{1215}$$

$$24) 2\sqrt{200}$$