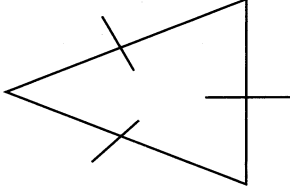


NAME: _____

Part A: Answer the following questions by filling in the blanks with the correct response.

- (4) 1. Classify the following triangles by
 i) sides
 ii) angles

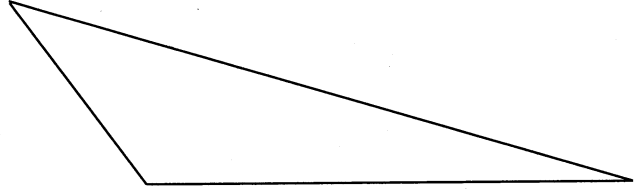
a)



i) sides: _____

ii) angles: _____

b)

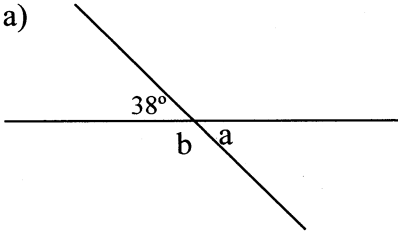


i) sides: _____

ii) angles: _____

- (9) 2. Determine the values of the variables.

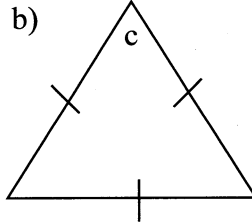
a)



a = _____

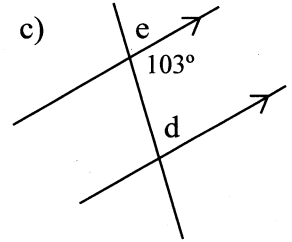
b = _____

b)



c = _____

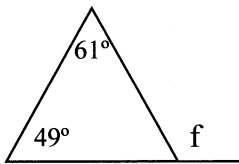
c)



d = _____

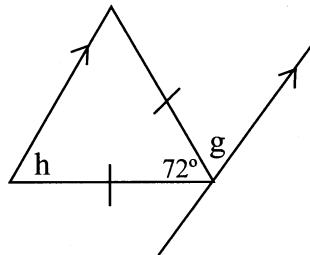
e = _____

d)



f = _____

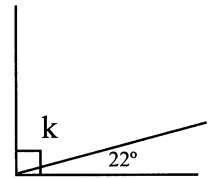
e)



g = _____

h = _____

f)



k = _____

- (5) 3. Match the phrase in A with the correct definition in B by putting the correct letter in the blank.

A

B

(a) Supplementary Angles

_____ Add to 90°

(b) Straight Angle

_____ Add to 180°

(c) Acute Angle

_____ An angle less than 90°

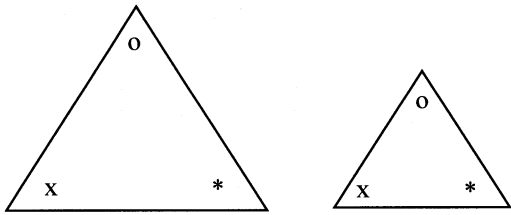
(d) Obtuse Angle

_____ A 180° angle

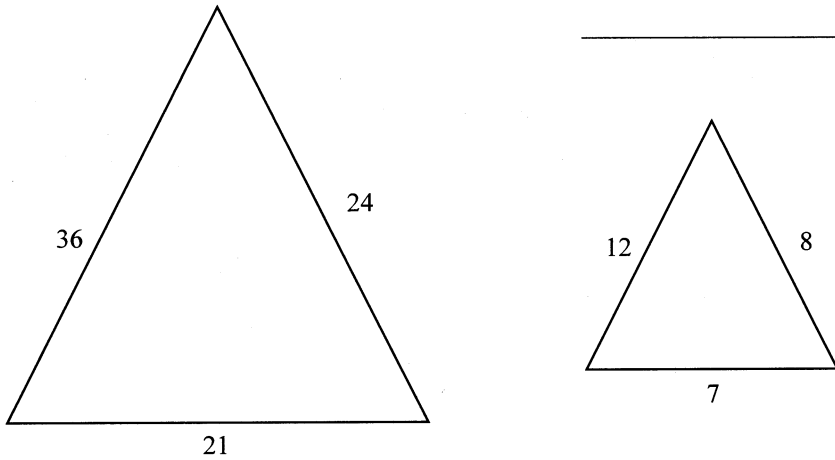
(e) Complementary Angles

_____ Greater than 90° but less than 180°

(1) 4. Why are the following triangles similar? _____



(1) 5. Why are the following triangles similar? _____



Part B: Answer the following questions in the space provided.
Show full solutions like the ones done in class and on the practice test.
Use proportions and/or the Pythagorean Theorem.

(4) 1. Solve for x , rounded to 1 decimal place, if necessary.

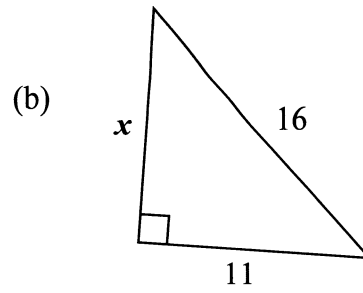
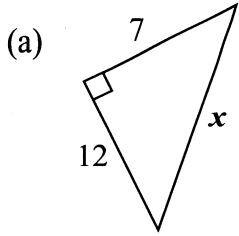
a) $x:9 = 58:6$

b) $31:13 = 5:x$

(4) 2. A lawn mower runs on a gas to oil mixture of 7 : 3
Find the amount of oil to mix with 5 L of gas. Answer to 1 decimal place.

(4) 3. In a survey 3 out of 7 people drove two-door cars.
In a parking lot with 1200 cars about how many would be two-door? Answer to the nearest car.

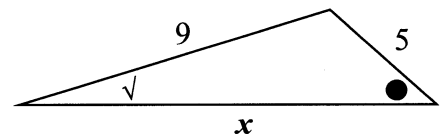
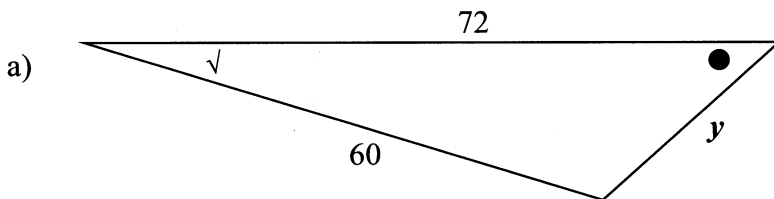
(6) 4. Find the value of x to 1 decimal place, if necessary.

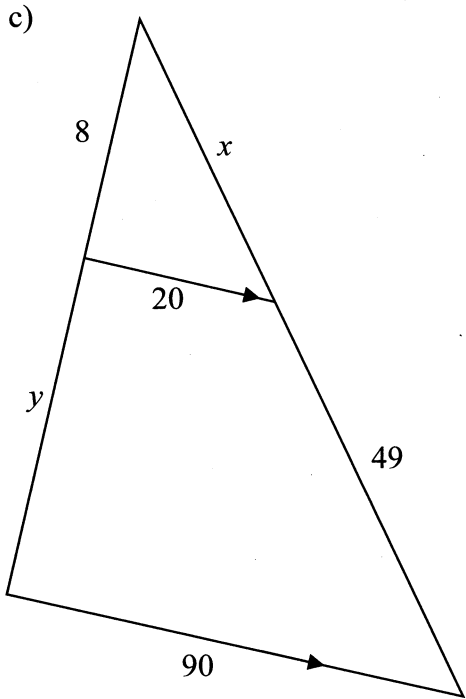
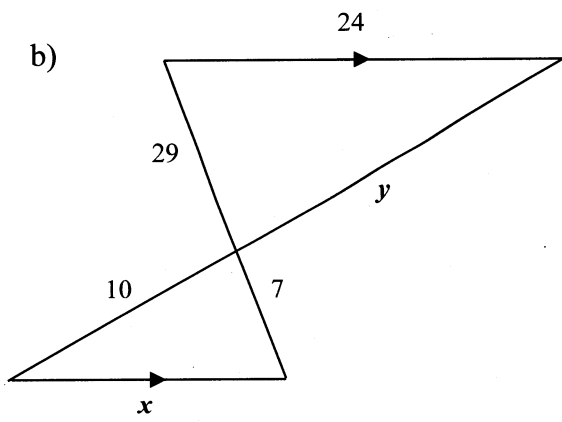


(4) 5. The cities of Edmonton, Calgary and Lloydminster form a right angle triangle on a map. The distance from Calgary to Lloydminster is the longest. The distance from Edmonton to Calgary is 300 km, the distance from Calgary to Lloydminster is 540 km. What is the distance from Edmonton to Lloydminster to 1 decimal place? Include a **fully labelled diagram** in your solution.

Part C: Answer the following questions in the space provided **using similar triangles**. Be sure to **mark equal angles**. You must have full solutions, like the ones done in class.

(16) 1. Determine the length of sides x and y to 1 decimal place.





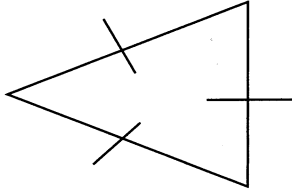
- (5) 2. A pole 3.8 m high casts a shadow that measures 1.4 m. A nearby tree casts a shadow 7.8 m long. Calculate the height of the tree to 1 decimal place. Include a **fully labelled** diagram in your solution.

NAME: _____

Part A: Answer the following questions by filling in the blanks with the correct response.

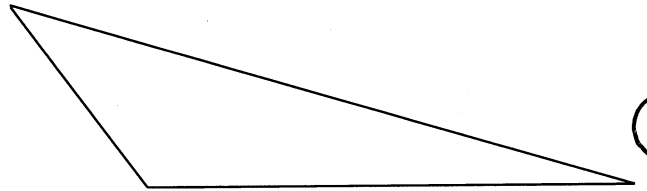
- (4) 1. Classify the following triangles by
 i) sides
 ii) angles

a)



i) sides: Equilateral ✓
 ii) angles: acute ✓

b)

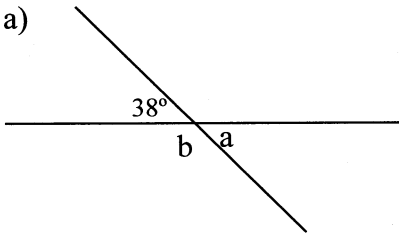


(4)

i) sides: Scalene ✓
 ii) angles: obtuse

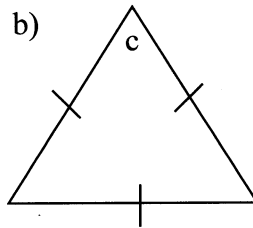
- (9) 2. Determine the values of the variables.

a)



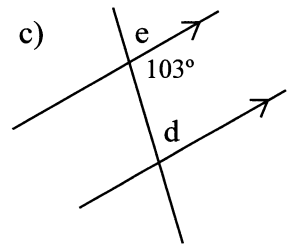
a = 38° ✓
 b = 142° ✓ $180 - 38$

b)



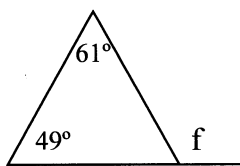
c = 60° ✓

c)



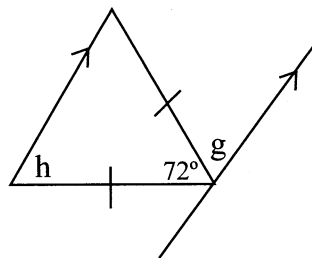
d = 77° ✓ $180 - 103$
 e = 77° ✓ "F"

d)



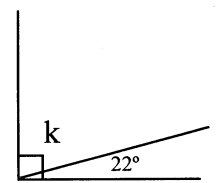
f = 110° ✓ $61 + 49$

e)



g = 54° ✓ $180 - 72$
 h = 54° ✓ $\frac{180 - 72}{2}$

f)



k = 68° ✓ $90 - 22$

(9)

- (5) 3. Match the phrase in A with the correct definition in B by putting the correct letter in the blank.

A

- (a) Supplementary Angles
- (b) Straight Angle
- (c) Acute Angle
- (d) Obtuse Angle
- (e) Complementary Angles

B

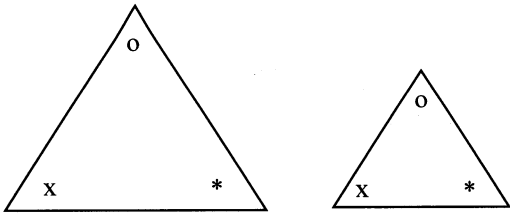
- (e) Add to 90° ✓
- (a) Add to 180° ✓
- (c) An angle less than 90° ✓
- (b) A 180° angle ✓
- (d) Greater than 90° but less than 180° ✓

(5)

18

(1) 4. Why are the following triangles similar?

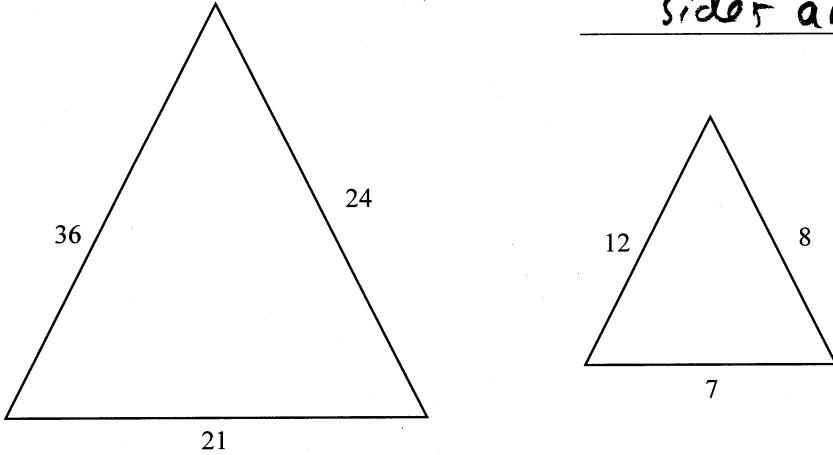
Corresponding angles
are the same ✓



(2)

(1) 5. Why are the following triangles similar?

ratios of the corresponding
sides are the same ✓



Part B: Answer the following questions in the space provided.
Show full solutions like the ones done in class and on the practice test.

(4) 1. Solve for x , rounded to 1 decimal place, if necessary.

a) $x:9 = 58:6$

(9) $\frac{x}{9} = \frac{58}{6} (9)$ ✓
 $x = 87$ ✓

b) $31:13 = 5:x$

$\frac{31}{13} = \frac{5}{x}$ ✓
(5) $\frac{13}{31} = \frac{x}{5} (5)$ ✓
 $2.1 = x$ ✓

(4)

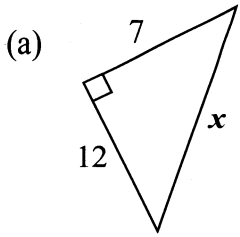
(4) 2. A lawn mower runs on a gas to oil mixture of 7 : 3
Find the amount of oil to mix with 5 L of gas. Answer to 1 decimal place.

gas:oil = gas:oil
 $7:3 = 5:x$ ✓
 $\frac{7}{3} = \frac{5}{x}$ ✓
(5) $\frac{3}{7} = \frac{x}{5} (5)$ ✓ → $x = 2.1$ ✓
∴ 2.1 L oil must be mixed (4)

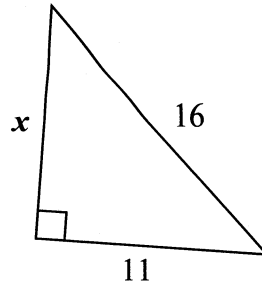
(4) 3. In a survey 3 out of 7 people drove two-door cars.
In a parking lot with 1200 cars about how many would be two-door? Answer to the nearest car.

part: total = part: total
 $3:7 = x:1200$ ✓
(1200) $\frac{3}{7} = \frac{x}{1200} (1200)$ ✓
 $514 = x$ ✓ → ∴ 514 would be 2-door cars (4)

(6) 4. Find the value of x to 1 decimal place, if necessary.



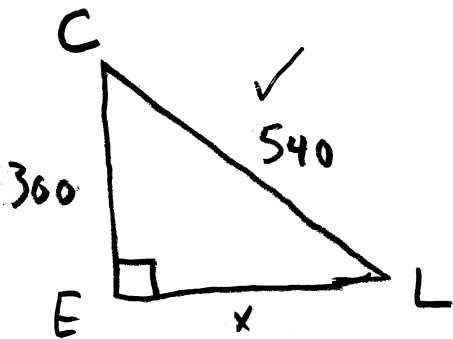
$$\begin{aligned}
 h^2 &= a^2 + b^2 \\
 x^2 &= 7^2 + 12^2 \\
 x^2 &= 193 \\
 x &= 13.9
 \end{aligned}$$



$$\begin{aligned}
 h^2 &= a^2 + b^2 \\
 16^2 &= x^2 + 11^2 \\
 256 &= x^2 + 121 \\
 135 &= x^2 \\
 11.6 &= x
 \end{aligned}$$

(6)

(4) 5. The cities of Edmonton, Calgary and Lloydminster form a right angle triangle on a map. The distance from Calgary to Lloydminster is the longest. The distance from Edmonton to Calgary is 300 km, the distance from Calgary to Lloydminster is 540 km. What is the distance from Edmonton to Lloydminster to 1 decimal place? Include a diagram in your solution.



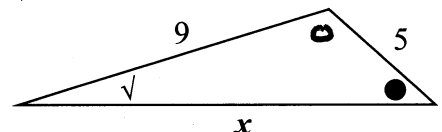
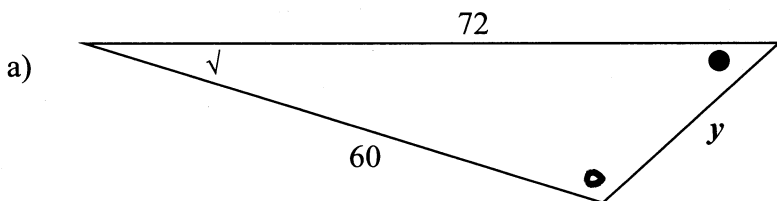
$$\begin{aligned}
 h^2 &= a^2 + b^2 \\
 540^2 &= 300^2 + x^2 \\
 291600 &= 90000 + x^2 \\
 201600 &= x^2 \\
 449.0 &= x
 \end{aligned}$$

distance is 449.0 km

(5)

Part C: Answer the following questions in the space provided using similar triangles. Be sure to mark equal angles. You must have full solutions, like the ones done in class.

(16) 1. Determine the length of sides x and y to 1 decimal place.



BIG: SMALL = BIG: SMALL

$$\begin{aligned}
 60:9 &= y:5 \\
 (15) \frac{60}{9} &= \frac{y}{5} (15) \\
 33.3 &= y
 \end{aligned}$$

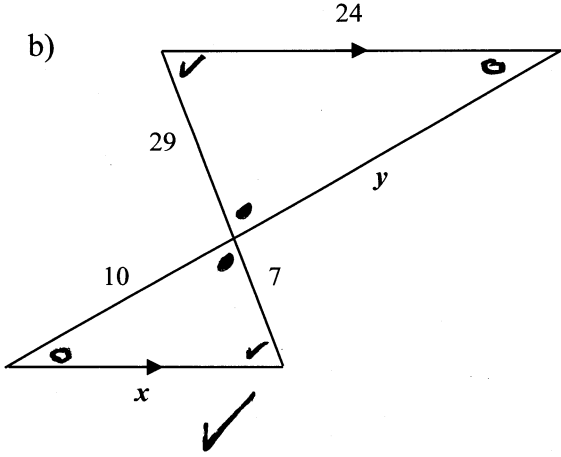
$$60:9 = 72:x$$

$$\frac{60}{9} = \frac{72}{x}$$

$$\begin{aligned}
 (72) \frac{9}{60} &= \frac{x}{72} (72) \\
 10.8 &= x
 \end{aligned}$$

(6)

~~16~~ 17



$$B:S = B:S$$

$$29:7 = y:10$$

$$(10) \frac{29}{7} = \frac{y}{10} \quad (10)$$

$$41.4 = y$$

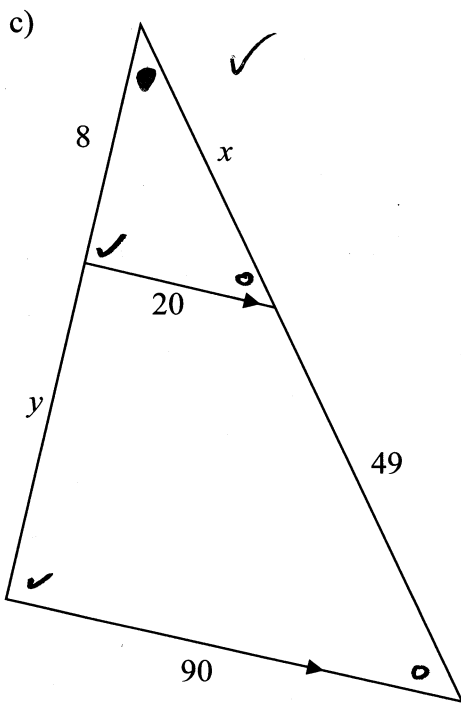
$$29:7 = 24:x$$

$$\frac{29}{7} = \frac{24}{x}$$

$$(24) \frac{7}{29} = \frac{x}{24} \quad (24)$$

$$5.8 = x$$

7



$$B:S = B:S$$

$$90:20 = y+8:8$$

$$(8) \frac{90}{20} = \frac{y+8}{8} \quad (8)$$

$$36 = \frac{y+8}{8}$$

$$288 = y+8$$

$$280 = y$$

$$90:20 = x+49:x$$

$$(20)(x) \frac{90}{20} = \frac{x+49}{x} \quad (20)(x)$$

$$90x = 20x + 980$$

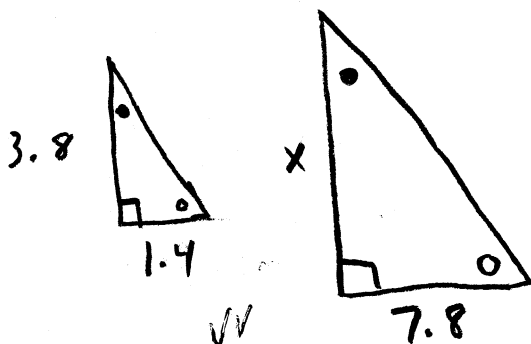
$$70x = 980$$

$$\frac{70x}{70} = \frac{980}{70}$$

$$x = 14$$

8

(5) 2. A pole 3.8 m high casts a shadow that measures 1.4 m. A nearby tree casts a shadow 7.8 m long. Calculate the height of the tree. Include a fully labelled diagram in your solution.



$$B:S = B:S$$

$$7.8:1.4 = x:3.8$$

$$(3.8) \frac{7.8}{1.4} = \frac{x}{3.8} \quad (3.8)$$

$$21.2 = x$$

5

∴ the tree is 21.2 m tall

20