**NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_DATE\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_PER.\_\_\_\_\_\_**

**5.2 & 5.4 – Congruent, Isosceles, & Equilateral Triangles**

**Find the following using the given diagrams.**

$$\left(3x\right)°$$

$$\left(2x\right)°$$

### $$A$$

### $$D$$

### $$G$$

$$80°$$

### $$M$$

### $$B$$

|  |
| --- |
| $$L$$$$G$$$$T$$$$H$$$$U$$$$K$$$$35°$$$$\left(7y\right)°$$$$x+5$$$$15$$$$x-3$$1. $∆GHU≅∆TKL$

$x=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$y=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$m∠G=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$m∠U=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$GH=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. $∆KIT≅∆CAR$

$$y+2$$$$40°$$$$x$$$$8$$$$6$$$$56°$$$$K$$$$T$$$$I$$$$A$$$$C$$$$R$$$x=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$y=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$m∠C=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$m∠T=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$TI=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

|  |
| --- |
| 1. $∆MAD≅∆GAB$

$x=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$m∠GAB=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$m∠ABG=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$m∠AMD=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| $$24°$$$$4z+1$$$$21$$$$y°$$$$\left(3x\right)°$$$$10$$$$A$$$$R$$$$E$$$$B$$$$C$$$$T$$1. $∆TAC≅∆BER$

$x=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$y=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$z=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$m∠A=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$m∠C=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$RE=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| $$5x-9$$$$x+6$$$$2x+3$$$$F$$$$T$$$$U$$$$A$$$$O$$$$R$$1. $∆FAR≅∆UOT$

Equation:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$x=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| $$X$$$$82°$$$$35°$$$$\left(5x-3\right)°$$$$B$$$$A$$$$M$$$$R$$$$C$$1. $∆ABC≅∆MXR$

Equation:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$x=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$m∠R=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| $$R$$$$55°$$$$I$$$$O$$$$D$$$$P$$$$T$$$$\left(5x\right)°$$$$50°$$1. $∆TRI≅∆POD$

Equation:\_\_\_\_\_\_\_\_\_\_\_\_\_$x=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$m∠O=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$m∠D=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| $$H$$$$I$$$$P$$$$O$$$$x+7$$$$25$$$$3x-1$$1. $∆HIP≅∆HOP$

Equation:\_\_\_\_\_\_\_\_\_\_\_\_\_$x=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$m∠HPI=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$HI=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. $∆ABC≅∆DEF$

 $AB=15$ $BC=20$ $AC=25$ $FE=3x-7$**Draw a picture!**Equation:\_\_\_\_\_\_\_\_\_\_\_\_\_$x=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. $∆ABC≅∆DEF$

 $DE=10$ $EF=13$ $DF=16$ $AC=4x-8$**Draw a picture!**Equation:\_\_\_\_\_\_\_\_\_\_\_\_\_$x=$\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. Draw isosceles $∆JKL$ with $∠K$ as the vertex angle. Name the legs, base, and base angles of the

 triangle.Legs:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Base:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Base Angles:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| $$L$$$$J$$$$K$$$$82°$$1. $m∠K=$\_\_\_\_\_\_\_\_\_\_\_
 | $$\left(2x\right)°$$$$C$$$$A$$$$B$$$$\left(4x\right)°$$1. $m∠A=$\_\_\_\_\_\_\_\_\_\_\_
 |
| $$\left(10x+20\right)°$$$$L$$$$M$$$$N$$1. $x=$\_\_\_\_\_\_\_\_\_\_\_
 | $$10t$$$$7t+15$$$$K$$$$J$$$$L$$1. $JK=$\_\_\_\_\_\_\_\_\_\_\_
 |
| $$57°$$$$S$$$$R$$$$U$$$$T$$1. $m∠TRU=$\_\_\_\_\_\_\_\_\_\_\_
 | 1. $m∠A=$\_\_\_\_\_\_\_\_\_\_\_

$$\left(21y+13\right)°$$$$\left(6y+1\right)°$$$$C$$$$A$$$$B$$ |
| $$2x$$$$\frac{5}{2}x-5$$$$2x$$$$Z$$$$X$$$$Y$$1. $XZ=$\_\_\_\_\_\_\_\_\_\_\_
 | $$\left(1.5y-12\right)°$$$$L$$$$M$$$$N$$1. $y=$\_\_\_\_\_\_\_\_\_\_\_
 |
| $$58°$$$$3$$$$1$$$$2$$1. $m∠1=$\_\_\_\_\_\_\_\_\_\_\_

 $m∠2=$\_\_\_\_\_\_\_\_\_\_\_ $m∠3=$\_\_\_\_\_\_\_\_\_\_\_ | $$1$$$$2$$$$3$$$$74°$$1. $m∠1=$\_\_\_\_\_\_\_\_\_\_\_

 $m∠2=$\_\_\_\_\_\_\_\_\_\_\_ $m∠3=$\_\_\_\_\_\_\_\_\_\_\_ |