Systematic Review 5D

1. bisector
2. parallel
3. reflex
4. perpendicular
5. similar
6. congruent
7. lines QE, QD, ED
8. Q
9. yes
10. Q
11. yes: Although this plane is not shown, any pair of intersecting lines lie in the same plane.
12. Use a ruler to check.
13. Use a ruler to check. The segment on each side of the bisector should measure 2,5 cm or 25 mm
14. Use a protractor to check.
15. Use a protractor to check. $\angle ABG$ and $\angle CBG$ should each measure 23º.
16. 
17. 
18. 
19. 
20. 

Systematic Review 5E

1. f
2. e
3. b
4. c
5. g
6. a
7. d
8. false: Use a compass and a straightedge
9. true
10. false: The two parts are congruent.
11. false: The line will be perpendicular only if it forms a 90º angle.
12. true
13. Use a ruler to check.
14. Use a ruler to check. The segment on each side of the bisector should measure 2,8 cm or 28 mm.
15. Use a protractor to check.
16. Use a protractor to check. $\angle XYG$ and $\angle ZYG$ should each measure 10º.
17. $$\begin{aligned} 24Q + 18Y &= 30 \\ 6(4Q + 3Y) &= 6(5) \\ 4Q + 3Y &= 5 \end{aligned}$$
18. $$\begin{aligned} -14Q - 21D &= -42 \\ -7(2Q + 3D) &= -7(6) \\ 2Q + 3D &= 6 \end{aligned}$$
19. $$\begin{aligned} 16X - 8 &= 56 \\ 8(2X - 1) &= 8(7) \\ 2X - 1 &= 7 \\ 2X &= 7 + 1 \\ 2X &= 8 \\ X &= \frac{8}{2} = 4 \end{aligned}$$
20. $$\begin{aligned} 22X + 33 &= 44 \\ 11(2X + 3) &= 11(4) \\ 2X + 3 &= 4 \\ 2X &= 4 - 3 \\ 2X &= 1 \\ X &= \frac{1}{2} \end{aligned}$$

Lesson Practice 6A

1. $\angle AHG$, $\angle CHF$
2. $\angle FHB$, $\angle GHD$
3. $\angle AHG$
4. $\angle GHD$
5. $\angle LFK$ or $\angle JFH$
6. $\angle CHA$
7. $\angle HFK$ or $\angle JFL$
8. $\angle DHG$
9. 40º: vertically opposite angles
10. 65º: vertically opposite angles
11. 90º: supplementary angles
12. 50º: complementary angles
13. 115º: supplementary angles
14. 90º: vertically opposite angles
15. f
16. a
17. e
18. b

19. d
20. c

Lesson Practice 6B

1. ∠MNQ, ∠SNR
2. ∠MNQ, ∠TNP
3. ∠YRZ
4. ∠TNP
5. ∠QNM or ∠PNR
6. ∠TNP
7. ∠YRZ or ∠SRN
8. ∠SNR
9. 55º: complementary angles
10. 35º: vertically opposite angles
11. 90º: supplementary angles
12. 85º: supplementary angles
13. 40º: vertically opposite angles
14. 55º: vertically opposite angles
15. alpha
16. complementary
17. supplementary
18. gamma
19. vertical
20. delta

Systematic Review 6C

1. 2; 5: If the student referred to these angles using their three-letter names, that would be correct as well.
2. 4
3. BFD
4. BFE or AFD
5. BFD or AFC or AFE
6. 1
7. 40º; complementary angles
8. 40º; If ∠2 = 50º, then ∠1 = 40º, since ∠1 and ∠2 are complementary. If ∠1 = 40º, then ∠4 = 40º, since ∠1 and ∠4 are vertically opposite an
9. 1 or 4
10. 140º; supplementary angles
11. any two of angles 1, 2, and 4
12. ∠3; ∠CFE
13. Use a ruler to check. The segments on each side of the bisector should measure 1,9 cm or 19 mm.
14. Use a protractor to check. The angles on each side of the bisector should measure 26º.
15. perpendicular
16. 90º
17. 180º
18. 90º
19. 180º
20. empty or null

Systematic Review 6D

1. true
2. false: They are complementary.
3. true
4. false: Perpendicular angles were not in the list of given information.
5. false: ray GK is the common side.
6. true
7. 39º: vertically opposite angles
8. 51º: complementary angles
9. 90º: perpendicular lines form 90º angles
10. right
11. supplementary
12. 360º
13. f
14. e
15. b
16. a
17. g
18. d
19. h
20. c

Systematic Review 6E

1. lines QR, RV, and QV
2. $\overline{RT}$, $\overline{XR}$, $\overline{XT}$
3. 360º ÷ 8 = 45º

4. If $\angle 1 = 90^\circ$, then $\angle SRV = 90^\circ$ since they are supplementary. $\angle SRV$ is made up of the three smaller angles in the problem, so the sum of their measures is equal to that of $\angle SRV$.
5. obtuse
6. yes: Both are 90°, so they add up to 180°.
7. no: Complementary angles add up to 90°.
8. yes
9. If $\angle$'s 2, 3 and 4 are congruent, and add up to 90°, the measure of each must be $\frac{90^\circ}{3}$ or 30°.
   Since $\angle 8$ and $\angle 4$ are vertically opposite angles, they are congruent, so $\angle 8 = 30^\circ$.
10. 2: vertically opposite angles
11. acute
12. $\angle 2 + \angle 3 + \angle 4 = 90^\circ$
    $\angle 3 = 90^\circ - (25^\circ + 35^\circ)$
    $\angle 3 = 90^\circ - 60^\circ = 30^\circ$
13. $\angle YRX = \angle 3$: vertical angles
    $\angle YRX = 30^\circ$ (see no. 12)
14. ray RQ
15. Use your ruler to check that the resulting line segments are equal in length.
16. Use your protractor to check that the resulting angles are equal in measure.
17. $(-7)^2 = (-7)(-7) = 49$
18. $-(15)^2 = -(15)(15) = -225$
19. $-12^2 = -(12)(12) = -144$
20. $-(9)^2 = -(9)(9) = -81$

Lesson Practice 7A

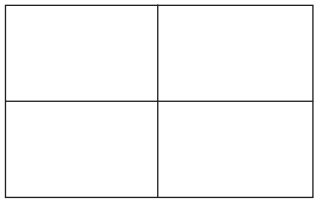
1. transversal
2. exterior
3. interior
4. congruent
5. alternate
6. parallel
7. same
8. congruent
9. 60°: vertically opposite angles
10. 60°: corresponding angles
11. $\angle 1$ and $\angle 2$ are supplementary, so $\angle 2 = 180^\circ - \angle 1 = 180^\circ - 70^\circ = 110^\circ$.
    $\angle 2$ and $\angle 6$ are corresponding angles, so they are congruent. Thus, $\angle 6 = 110^\circ$.
12. 70°: corresponding angles
13. 120°: corresponding angles
14. 120°: vertically opposite angles
15. yes: Since $\angle 1$ and $\angle 5$ are corresponding angles, they have the same measure. $\angle$'s 5 and 17 are supplementary, so angles 1 and 17 are also.
16. yes
17. no: They are alternate interior angles.
18. no: They are supplementary angles and add up to 180°. If they were congruent, they would both be 90°.
19. yes: corresponding angles
    (It may help to ignore line MP.)
20. yes: Angles 12 and 13 are alternate exterior angles.
    (It may help to ignore lines LR and MP.)

Lesson Practice 7B

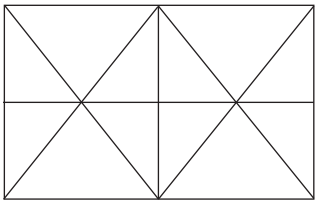
1. false
2. true
3. true
4. false: They are always congruent.
5. false: Two parallel lines are cut by a transversal.
6. true
7. true
8. true
9. 110°: alternate interior angles
10. 110°: corresponding angles
11. 85°: corresponding angles
12. 80°: corresponding angles
13. 80°: alternate exterior angles
14. 85°: vertically opposite angles
15. yes: They add up to 180°.
16. yes (It may help to ignore line EF.)

4. 1 started with
2 that are half of first triangle
6 small
7 overlapping (You may need to draw these separately to be able to count each one. See Above.)
16 total

5.

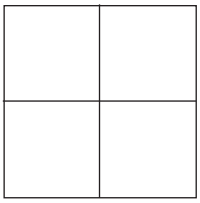


6.

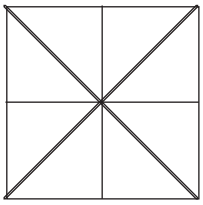


Honours Lesson 6

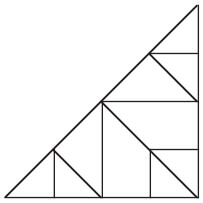
1.



2.



3. triangles, squares, trapeziums, pentagons



4. answers will vary

5. $P = 6X + 0{,}5(6)X$
$P = 6X + 3X$
$P = 9X$

6. $P = 9X$
$P = 9(50)$
$P = R450.00$

Honours Lesson 7

1. Extend all segments.
$\overline{AD} \parallel \overline{XY} \parallel \overline{BC}$
$\overline{AB} \parallel \overline{RS} \parallel \overline{DC}$
Corresponding angles are congruent.

2. Yes; extend $\overline{DF}$ and $\overline{BC}$.
These 2 line segements are cut by transversal $\overline{AB}$.
Corresponding angles ADF and ABE are both 90º.

3. Extend $\overline{DC}$ to include point G.
$\angle A = 100º$
Since $\overline{AB}$ and $\overline{DC}$ are parallel,
$\angle GDA$ is 100º.
$\angle EDF$ is 80º, since it is supplementary to $\angle GDA$.
$\angle DEF = 90º$ - definition of perpendicular