Area and Perimeter of Compound Shapes (C)

Instructions: Find the area and perimeter of each compound shape.

1)

H ―― 21.1 mi ―― G

8.1 mi

10.1 mi

F   E   D

11.0 mi

A   11.0 mi   B

2)

8.1 cm   G 4.3 cm F

H

8.3 cm   7.0 cm

12.2 cm

A   B   C   E

5.4 cm

D

3)

18.3 ft

F   E

9.3 ft   8.4 ft   9.3 ft

4.2 ft   4.2 ft

A   B   C   D

4)

H

15.2 km   12.3 km   15.2 km

F   E   D

G   5.2 km

4.1 km

20.2 km

A   B   C

5)

4.1 yd

F   E

4.1 yd   9.1 yd

G   D   C

8.3 yd

7.1 yd   I   6.3 yd

H

8.3 yd   A   B

6)

D   C

11.2 in

11.2 in

E

B

13.3 in

A
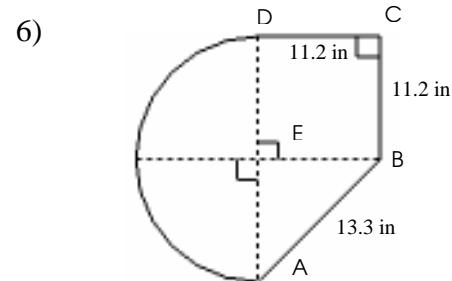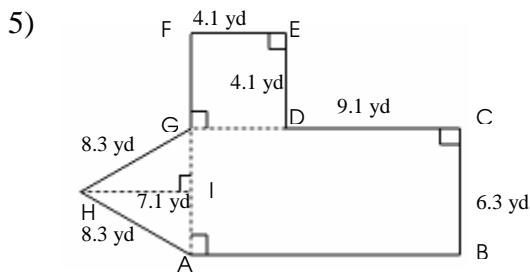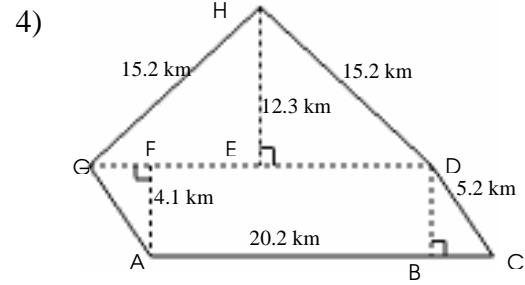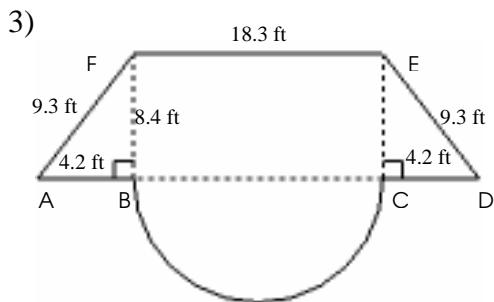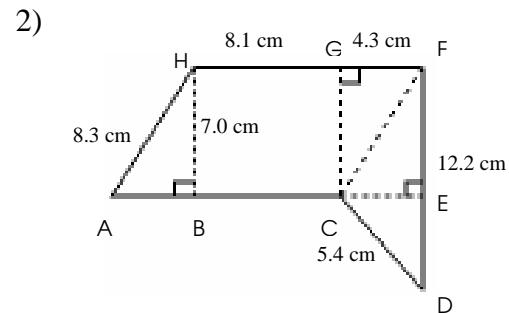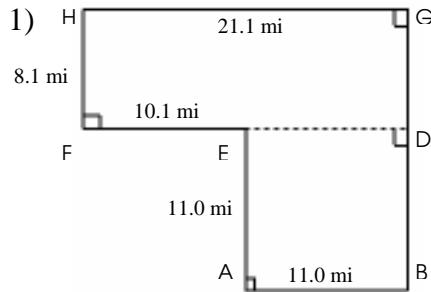
Area and Perimeter of Compound Shapes Answer (C)

Instructions: Find the area and perimeter of each compound shape.

1)

H — 21.1 mi — G
8.1 mi
10.1 mi
F — E — D
11.0 mi
A — 11.0 mi — B
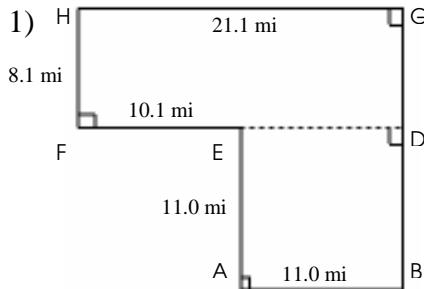
Area = Area of ABDE + Area of DFGH
= $(AB)^2$ +(HG x HF)
= $(11.0)^2$ +(21.1 x 8.1)
= 291.9 mi^2

Perimeter = (3x AB) + (2x HF)+ EF + HG
= (3x 11.0) + (2x 8.1)+ 10.1 + 21.1
= 80.4 mi

2)

8.1 cm   G 4.3 cm F
H
8.3 cm   7.0 cm
12.2 cm
A   B   C   E
5.4 cm
D
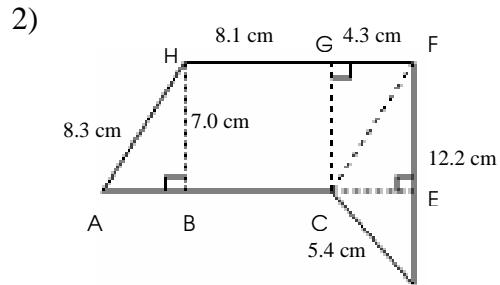
Area = Area of ACFH + Area of CDF
= ((HG+GF) x HB) + (0.5x CExDF)
= ((8.1+4.3) x 7.0) + (0.5x 4.3x12.2)
= 113.0 cm^2

Perimeter = (2x(HG+GF))+ AH +FD +CD
= (2x(8.1+4.3))+ 8.3+12.2 +5.4
= 50.7 cm

3)

18.3 ft
F — E
9.3 ft   8.4 ft   9.3 ft
4.2 ft   4.2 ft
A   B   C   D
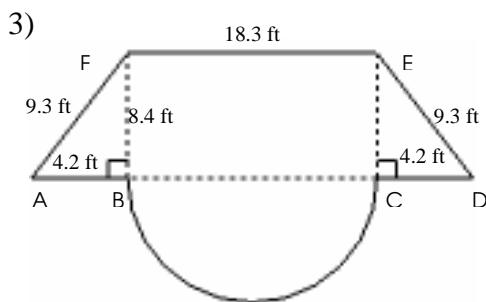
Area = Area of ADEF + Area of Part Circle BC
= (0.5x(2xAB+BC+EF)xBF) + 0.5 Π (0.5 BC)^2
= (0.5x(2x4.2+18.3+18.3)x8.4) + 0.5 Π(0.5x18.3)^2
= 320.4 ft^2

Perimeter = (2x AB) + Arc BC + (2xDE) +EF
= (2x 4.2) + 0.5x3.14x18.3+ (2x9.3)+ 18.3
= 74.0 ft

4)

H
15.2 km   12.3 km   15.2 km
F   E
G   D   5.2 km
4.1 km
20.2 km
A   B   C
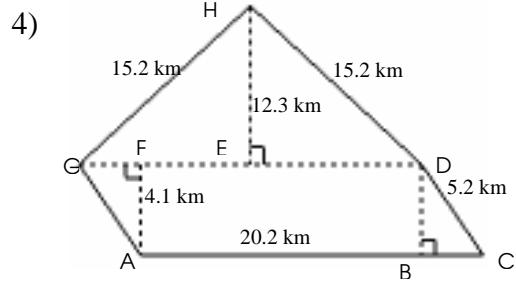
Area = Area of ACDG + Area of DGH
= (AC x AF) + (0.5x DG x EH)
= (20.2 x 4.1) + (0.5x 20.2 x 12.3)
= 207.1 km^2

Perimeter = AC + (2x CD) +(2 x DH)
= 20.2 + (2x 5.2) +(2 x 15.2)
= 61 km

5)

F 4.1 yd E
4.1 yd
G   D   9.1 yd   C
8.3 yd
H   7.1 yd   I   6.3 yd
8.3 yd
A   B
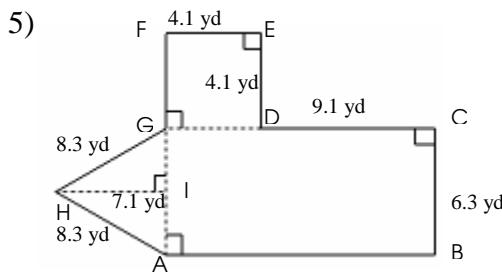
Area = Area of AGH + Area of ABCG + Area of DEFG
= (0.5x AG x HI) + ((CD+FE)x BC))+ (FE)^2
= (0.5x 6.3x 7.1) + ((9.1+4.1)x 6.3))+ (4.1)^2
= 122.3 yd^2

Perimeter = (2x AB) + BC +(2x FE) + (2x GH)
= (2x 13.2) + 6.3 +(2x 4.1) + (2x 8.3)
= 57.5 yd

6)

D   C
11.2 in
11.2 in
E
B
13.3 in
A
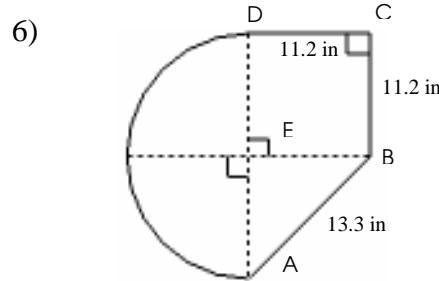
Area = Area of ABE + Area of BCDE + Area of Part Circle AED
= (0.5x AEx BE) +(BC)^2+0.5 Π (BC)^2
= (0.5x (11.2)^2) + (11.2)^2+0.5 x 3.14 (11.2)^2
= 385.1 in^2

Perimeter = Arc AD + AB + (2x BC)
= 0.5x3.14x2x11.2 + 13.3 +(2x11.2)
= 70.9 in