

Answer Key

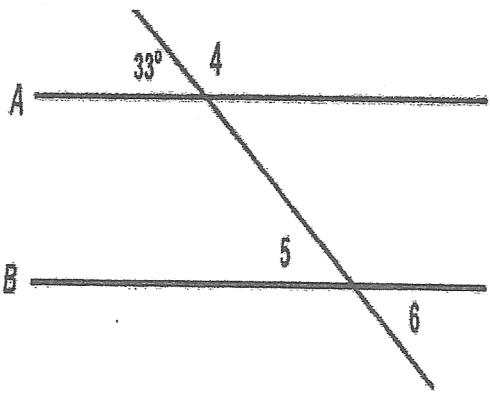
Unit 4 Take Home and Check

A = Basic

B = Moderate

C = Challenging

A



- 1) What is the measure of angle 5? Why?
- 2) What is the measure of angle 6? Why?
- 3) What is the measure of angle 4? Why?

- 1) 33° . It is in the same position as the 33° angle. Both angles are congruent.
- 2) 33° . It is vertical to $\angle 5$.
- 3) Angle 4 = 147° because it is supplementary with 33° ($180 - 33 = 147$).

A

True or False?? If false explain why.

- 4) A regular hexagon always has six congruent sides.
- 5) The angles of a triangle sum to 180° .

- 4) True
- 5) True

A

- 6) A triangle with angles 110° , 30° , and 40° is isosceles.
- 7) A triangle with sides 30, 40, and 50 ft. is scalene.
- 8) A rhombus is a type of square.
- 9) A parallelogram has four sides and four congruent sides.
- 10) The area of a parallelogram with base of 10 feet and height of 2 ft. is 20 square feet.
- 11) The base of a triangle with area of 36 square cm and height of 4 cm is 16 cm.

6) False. An isosceles Δ has 2 \cong (congruent) sides and 2 \cong angles.

7) True

8) False. Not every rhombus is a square.

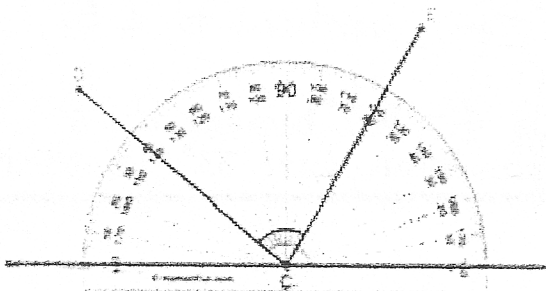
9) False. It can have 4 \cong sides but it does not have to.

10) True

11) False. $\frac{b(4)}{2} = 36$ if $b=16$, the area would be 32 cm

A

12) What is the measure of the angle below?



Show the measure of angle DCE

12) 80°

A

13) Find the circumference of a circle with a radius of 5 inches.

$$\begin{aligned}
 13) \quad C &= 2\pi r \\
 C &= 2(3.14)5 \\
 C &= 10(3.14) \\
 \boxed{C} &= \boxed{31.4 \text{ in}}
 \end{aligned}$$

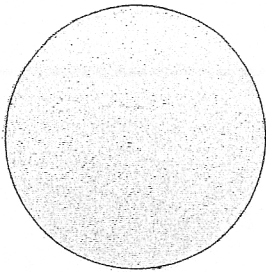
A

14) Find the area of a circle with a diameter of 6 feet.

$$\begin{aligned}
 14) \quad d &= 6 \text{ ft} \\
 r &= \frac{d}{2} = \frac{6}{2} = \boxed{3 \text{ ft}} \\
 A &= \pi r^2 = 3.14 \times 3^2 = \boxed{28.26 \text{ ft}^2}
 \end{aligned}$$

B

Below is an illustration of a round flower garden. Use the illustration of the garden circle to solve problems 15 and 16. The area of the flower garden circle is 2,640 feet squared. Show all of your work.



15) What is the diameter of the garden?

$$\begin{aligned}
 15) \quad A &= \pi r^2 \\
 2640 &= (3.14)r^2 \\
 \div \text{ by } 3.14 & \quad \quad \quad \div \text{ by } 3.14
 \end{aligned}$$

$$840.76 = r^2$$

take the $\sqrt{\quad}$ $\sqrt{840.76} = \sqrt{r^2}$

$$29 \text{ ft} \approx r$$

$$d = 2r$$

$$\boxed{d = 2 \cdot 29 = 58 \text{ ft}}$$

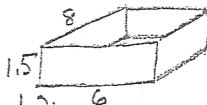
16) What is the circumference of the garden circle? Use your answer from #12 if needed)

$$\begin{aligned}
 16) \quad C &= \pi d \\
 C &= (3.14)(58) \quad \boxed{C = 182.12 \text{ ft}}
 \end{aligned}$$

B

17) A swimming pool is 8 m long, 6 m wide and 1.5 meters deep. The water resistant paint needed for the pool costs \$6 per square meter.

- How much will it cost to paint the interior surfaces of the pool?
- How many liters of water will be needed to fill it?

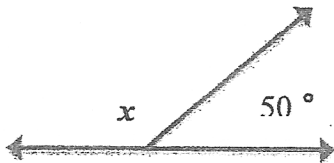


a) 2 sides $1.5 \times 8 = 12$
 2 sides $1.5 \times 6 = 9$
 bottom $6 \times 8 = 48$
 $2(12) + 2(9) + 48 = 90 \text{ m}^2$
 $90 \text{ m}^2 \times 6 = \540

b) $V = 8 \times 6 \times 1.5 = 72 \text{ m}^3$

A

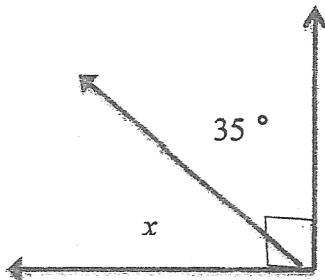
18) Give the measurement of angle measurement of angle x. Explain how you got it. (no protractor!)



18) $180 - 50 = 130^\circ$
 Supplementary \angle 's

A

19) Give the measurement of angle x. Explain how you got it. (no protractor!)



19) $90 - 35 = 55^\circ$
 Complementary \angle 's

A

Label each solid below:

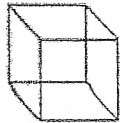
20) _____



21) _____



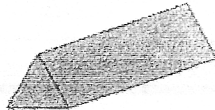
22) _____



23) _____



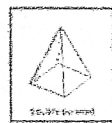
24) _____



25) _____



26) _____



27) _____



28) _____



29) _____



20) cone

21) rectangular prism

22) cube

23) hexagonal prism

24) triangular prism

25) cylinder

26) square pyramid

27) triangular pyramid

28) sphere

29) hemisphere ($\frac{1}{2}$ sphere)

A

30) How many faces, edges, and vertices does the rectangular prism have?

30) faces = 6
edges = 12
vertices = 8

A

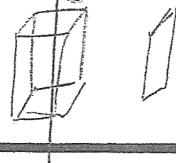
31) How many faces, edges, vertices does #22 have?

31) faces = 6
edges = 12
vertices = 8

A

32) Describe the vertical cross section of #21.

32) It is a rectangle.



A

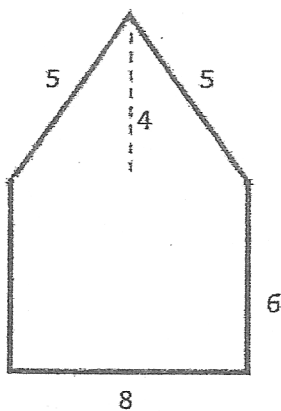
33) Describe the horizontal cross section of #24.

33) It is a rectangle



C

34) Find the area of the following composite figure.



34) Area of the triangle:

$$\frac{1}{2} b \cdot h = \frac{1}{2} (8 \cdot 4) = \frac{1}{2} (32) =$$

$$\boxed{16 \text{ units}^2}$$

Area of the rectangle:

$$b \times h = 8 \times 6 = \boxed{48 \text{ units}^2}$$

Total

$$16 + 48 = \boxed{64 \text{ units}^2}$$

B

35) A square has an area of 225 cm^2 what is the perimeter?

35) $\boxed{225 \text{ cm}^2}$ $\sqrt{225} = 15$

Each side is 15.

$$P = 15 + 15 + 15 + 15 = \boxed{60 \text{ cm}}$$