# Math 7 Unit 9 worksheet: Area of a circle

Name _____ Date _____ Period _____

**1.** Find the area of each circle from its radius $r$ or diameter $d$. Give it exactly in terms of $\pi$ and rounded to one decimal place, with its unit.

(a) $r = 5$ cm

(b) $d = 16$ m

(c) $r = 2.5$ m

(d) $d = 30$ in

(e) $r = 1.2$ cm

(f) $d = 13$ ft

**2.** Each circle's area is given. Find its radius and its diameter.

(a) $A = 81\pi$ cm$^2$

(b) $A = 144\pi$ m$^2$

(c) $A = 6.25\pi$ in$^2$

(d) $A = 0.49\pi$ m$^2$

**3.** A round gym mat covers $25\pi$ m$^2$ of floor. A strip of tape runs once around its edge. How long is the tape? Give the length exactly and rounded to one decimal place.

**4.** Lucas finds the area of a round mirror 10 cm across. He writes $A = \pi \times 10^2 = 100\pi$ cm$^2$.

(a) What mistake did Lucas make?

(b) Find the correct area, exactly and to one decimal place. How many times the correct area is Lucas's answer?


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**5.** Elena prints round stickers in two sizes, 4 cm across and 10 cm across. She says the large sticker uses 2.5 times as much paper as the small one, because $10 \div 4 = 2.5$.

Find the area of each sticker exactly, then decide whether Elena is right.

**6.** A vinyl record is a circle 30 cm across. Its paper label in the middle is a circle 10 cm across with the same center. The rest of the face carries the grooves.

(a) Find the area of the grooved part, exactly and to one decimal place.

(b) What fraction of the record's face is grooved?

**7.** Maya has a square of fabric 50 cm on each side. She wants to make a round cushion top with exactly the same area as the square.

(a) Find the radius and the diameter of the round top, each to one decimal place. Check the radius by squaring.

(b) Is the round top wider or narrower than the square? Explain why that makes sense.


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