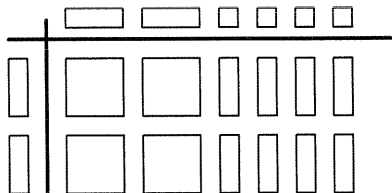


10. A large white square represents an x^2 -tile, a white rectangle represents an x -tile, and a small white square represents a 1-tile.

Which of these multiplication sentences is modelled by the algebra tiles below?

- i) $2x(2x + 4)$
- ii) $2(2x^2 + 4)$
- iii) $x(2x + 4)$
- iv) $2x(4x^2 + 8x)$



- a. iv
 - b. iii
 - c. i
 - d. ii
11. Multiply: $(-5w)(7w)$
- a. $-12w^2$
 - b. $2w^2$
 - c. $35w^2$
 - d. $-35w^2$
12. Divide: $\frac{-12x^2}{3x^2}$
- a. $-9x$
 - b. -9
 - c. -4
 - d. $-4x$
13. What is $\frac{4^5}{4^6 - 4}$?
- a. $\frac{256}{1025}$
 - b. $\frac{1}{4}$
 - c. 0
 - d. $\frac{256}{1023}$
14. Express $[(-2)^4]^6$ as a power with a single exponent.
- a. $(-2)^{24}$
 - b. $(-2)^{10}$
 - c. $(-2)^{-2}$
 - d. $(-8)^6$
15. Which power is equivalent to $\sqrt[7]{157^8}$?
- a. $157^{\frac{8}{7}}$
 - b. $157^{\frac{7}{8}}$
 - c. $\frac{1}{157^{\frac{8}{7}}}$
 - d. $\frac{1}{157^{\frac{7}{8}}}$

_____ 16. Write $(16k^{\frac{1}{3}})^{\frac{3}{2}}$ as a power with a single positive exponent.

a. $4k^{\frac{1}{2}}$

c. $16k^{\frac{1}{2}}$

b. $64k^{\frac{1}{2}}$

d. $64k$

_____ 17. Express $d^{-\frac{1}{13}}$ as an equivalent radical.

a. $\sqrt[13]{d^1}$

c. $\frac{1}{\sqrt[13]{d^1}}$

b. $\sqrt[13]{d^{13}}$

d. $\frac{1}{\sqrt[13]{d^{13}}}$

_____ 18. Evaluate: $\left[(-5)^0\right]^3$

a. -3

b. -1

c. 3

d. 1

_____ 19. How long is a ladder that reaches a height of 4.77 m at an angle of elevation of 74° ?

a. 3.66 m

c. 17.31 m

b. 1.37 m

d. 4.96 m

_____ 20. In $\triangle TUV$, $UV = 8$ m, $\angle U = 90^\circ$, and $\angle T = 38^\circ$. Determine the length of UT , to the nearest metre.

a. 9 m

c. 11 m

b. 10 m

d. 12 m

_____ 21. A wheelchair ramp is being built for the entrance to a school. If the ramp makes an angle of 4° with the ground and has a horizontal length of 6 m, determine the height of the ramp, to the nearest tenth of a metre.

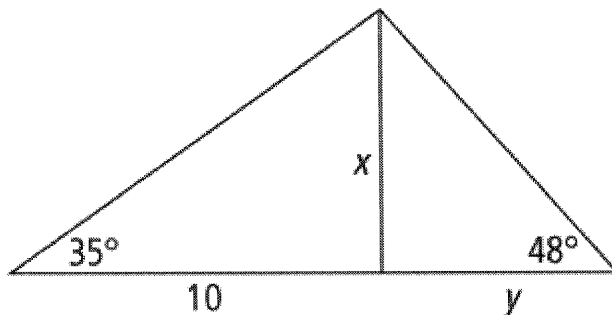
a. 1.1 m

c. 0.4 m

b. 0.8 m

d. 0.3 m

Use the diagram to answer the following question(s).



_____ 22. Determine the length of y , to the nearest tenth of a metre.

a. 5.7 m

c. 7.0 m

b. 6.3 m

d. 8.2 m

Name: _____

ID: A

Completion

Complete each statement.

1. The surface area of a sphere depends on its _____ only.

Short Answer

1. Determine the product: $(-2x^3y)(6x + 3x^3y - 5z)$

2. Evaluate $\sqrt{1800}$ using prime factorization.

3. Simplify completely $\left[\frac{(a^2bc^4)(ab^3c^2)}{(b^2c^5)^3} \right]^2$

4. Use algebra tiles to model the binomial multiplication $(2x - 3)(x - 1)$ and write the simplified solution.

Name: _____

ID: A

5. What is the simplified form of the product $(7x^2 + 3x + 6)^2$?

6. A helicopter pilot flying at a height of 1050 ft can see the landing pad at an angle of depression of 41° . How far is the helicopter from the landing pad?

Problem

1. A surveyor is measuring the heights of various buildings. From the top of one building, the angle of elevation to the top of the neighbouring building is 20° and the angle of depression to the bottom of the building is 74° . If the neighbouring building is 11 m away, how tall is it?