

PRACTICE SET 1

ANSWERS ON P. 552

1 Evaluate each expression.

a 7^3

b $(-35)^2$

c 4^4

d $\sqrt{400}$

e $\sqrt[3]{2744}$

f $\sqrt{2.25}$

2.08

2 Evaluate each expression without using a calculator.

a 28×5

b 15×9

c $8 \times 3 \times 5$

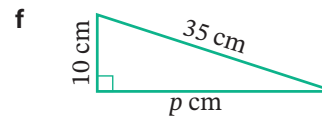
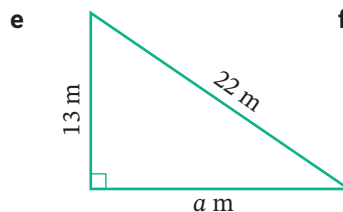
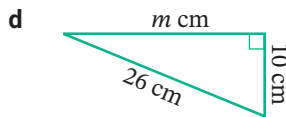
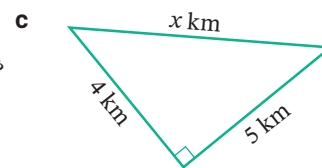
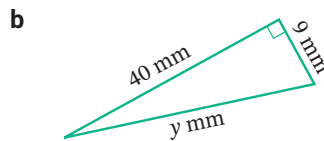
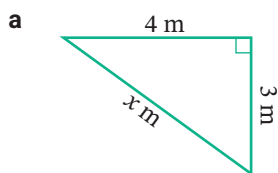
d 16×30

e $720 \div 4$

f $300 \div 20$

2.01

3 Find the value of each variable, correct to one decimal place where necessary.



1.05

4 Evaluate each expression.

a $-3 + 11$

b $6 \times (-5)$

c $-11 - 9$

d $3 - (-2)$

e $-7 \times (-4)$

f $\frac{42}{-7}$

g $7 - 9$

h $-4 - (-6)$

i $-6 - 10$

j -4×7

k $-54 \div (-9)$

l $75 \div (-5)$

2.02

2.03

5 Evaluate each expression.

a $4 + 7 \times 2$

b $16 - 28 \div (-4)$

c $(-32 + 11) \div 7$

d $32 \div (-8) - 7 \times 1$

e $(3 + 7 \times 5) \div 2$

f $(17 - 6) \times (3 - 12)$

g $\frac{12+7}{4}$

h $\frac{8.8}{6.5-5.4}$

i $\frac{64-12}{15+11}$

2.04

6 If $a = 3$ and $b = 5$, then evaluate each expression.

a $2b + a$

b a^2

c $5a - b$

d $ab - b$

3.03

3.05

7 Simplify each expression.

a $3k + 2j - k + 2j$

c $4p + 3q + 7p + 2q$

b $5p - p$

d $10x + 7y - 2x - y$

2.05

8 Evaluate each expression.

a $1.35 + 0.2 - 5.78$

b $35.3 - 12.91$

2.06

9 Evaluate each expression.

a 0.8×9

b 1.5×0.3

c $2.1 \div 5$

d $5.52 \div 0.3$

3.02

10 Write each statement as an algebraic expression.**a** 5 more than k **b** 20 times k **c** half of k **d** 3 lots of k increased by 10**e** the difference between k and 12 where k is larger**f** k multiplied by itself

3.06

11 Simplify each expression.

a $5 \times 2p$

b $12m \div 2m$

c $-4x \times 3xy$

3.07

d $3a \times 2b \times 4$

e $\frac{14xy}{7xy}$

f $\frac{5a \times 4a}{10a}$

2.09

12 Use a factor tree to write each number as a product of its prime factors, in index notation.**a** 180**b** 875

2.09

13 Use factor trees to find the highest common factor of each pair of numbers.**a** 28 and 72**b** 36 and 90

2.10

14 Use index notation to simplify each expression.

a $2^4 \times 2^3$

b $7^6 \times 7^5$

c $5^8 \div 5^3$

d $8^5 \div 8^4$

2.11

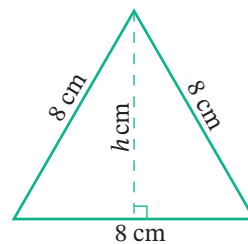
e $(3^4)^2$

f $(11^3)^5$

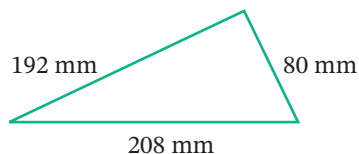
g 7^0

h $(8 - 5)^0$

1.08

15 Find the height, h cm, of an equilateral triangle with sides 8 cm long. Write your answer:**a** as a surd**b** correct to 2 decimal places.

1.06

16 Test whether this triangle is right-angled. If it is, copy the triangle and draw the right angle.

17 Use factor trees to find the lowest common multiple of each pair of numbers.

a 12 and 18

b 18 and 27

2.09

18 Expand and simplify each expression.

a $4(x + 2)$

b $6(m - 4)$

c $-7(2k + 1)$

d $-(3p + q)$

e $2(m + 2) + 4m$

f $8 + 4(p - 2)$

3.09

19 Factorise each expression.

a $2m + 4$

b $d^2 - d$

c $6p + 12q$

d $-12x - 24$

e $2ab + 3a$

f $-2x^2 + 6x$

3.11

3.12