

St. Ninians

Additional
Homework
Resource

S2

Algebra

1) Simplify the expression $8x + 5 + 5x - 3$

2) Simplify the expression $3x^2 - 5x^2 + 8x^2$

3) Simplify the expressions

a) $2m \times 3m \times 4m$

b) $5t - 4y - 3y - 5t$

4) Simplify a) $5x + 9y - 5x - 8y$ b) $8t + 11 - 7t - 13$

5) Simplify a) $3x - (-2x)$ b) $-5y - 8y$ c) $8m + (-9m)$

6) If $x = 10$, find the value of $5x^2 - 7x$

7) If $x = 10$, $y = -4$ and $t = -6$ find the value of $x^2 - yt$.

8) If $x = 6$, $y = 2$ and $t = 5$ find the values of

a) xyt b) $2x^2$ c) $xy - yt$ d) $(x + y)^3$

9) If $a = -3$, evaluate each of the following :

a) $8a - (-3)$

b) $-6a + (-2)$

c) $a - 8$

d) $-8a - 10$

e) $-a - 9$

f) $-2a - 4$

g) $3a - 1$

h) $4a - (-6)$

i) $2a + 3$

j) $8a + 5$

k) $5a + (-10)$

l) $-7a + 9$

m) $-3a + (-1)$

n) $-2a + (-7)$

10) If $p = -4$, $q = -7$ and $r = -1$ find the values of

a) $p + q + r$ b) $q - r$ c) $r - p - q$

11) If $x = -4$, $y = -10$ and $t = 5$ find the value of $x - y - t$.

12) If $a = -5$, $b = -8$ and $c = 26$, find the value of $\frac{a+b}{c}$

13) Expand

a) $6(5x-9)$

b) $7(6x-9)$

c) $4(4x-5)$

d) $2(6x-7)$

e) $2(3x-8)$

f) $7x(x+2)$

g) $x(2x+5)$

h) $3x(4x-3)$

i) $2x(4x+3)$

14) Simplify a) $5(2x+3) - 9x$

b) $5x - 3(2x-3)$

c) $4(3x + 2) + 2(3x - 4)$

15) Simplify the expressions

a) $3(2x+5) + 4(3-x)$

b) $5x(2x+5) + 10x(2-x)$

c) $7(x - 4) + 5(4 - x)$

d) $5(3x - 2) + 4(x + 3)$

e) $x(x+2) + x(2-x)$

f) $4x(x + 4) + 3x(5 - x)$

g) $8y(y - 3) + 5y(6 - y)$

h) $5x(2x - 7) + 4x(3 - 2x)$

i) $3 + 5(2x - 3) + 2(5 - 3x)$

16) Multiply out the brackets and simplify

a) $3(2x+5)+4(x+3)$

b) $6(x+3)+2(x-5)$

c) $5+3(x+2)$

d) $8+2(x-4)$

e) $4(3x-5)+5(x+4)$

f) $3x+4(x-1)-6x$

g) $7+2(2x-3)+1$

h) $3x(x+1)+2x(1-x)$

i) $2x(x+3)+x(x-6)$

j) $3x(x+9)-3x^2$

k) $x(x+6)-x^2$

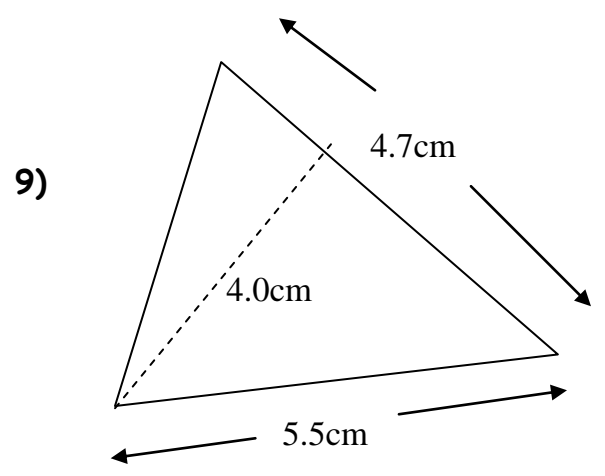
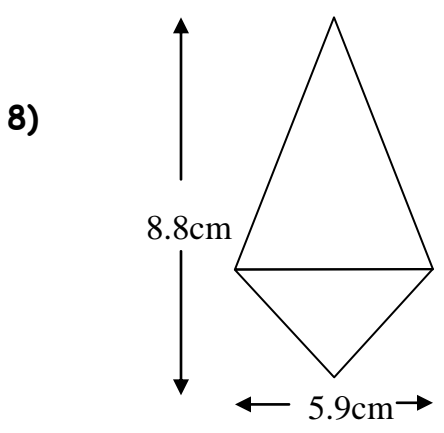
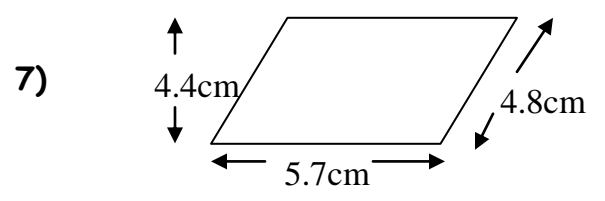
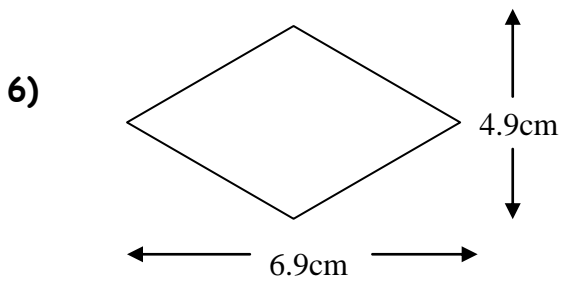
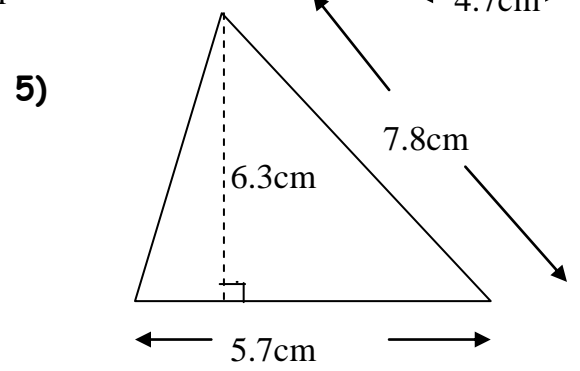
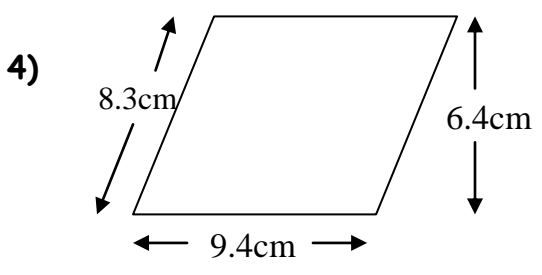
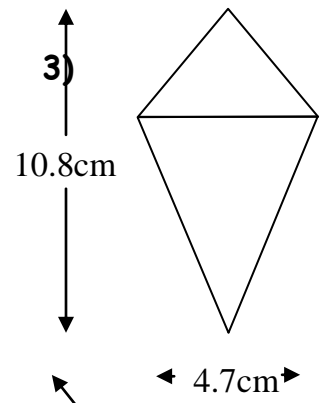
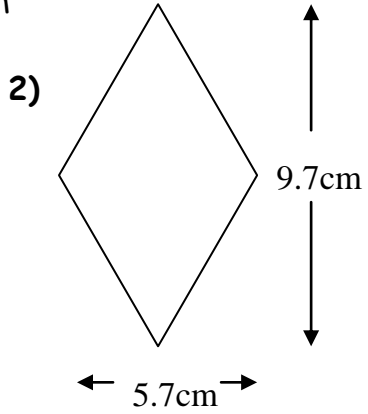
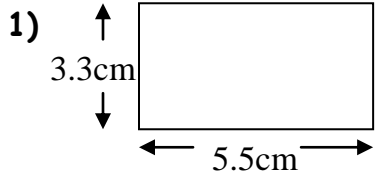
l) $3x(4x+3)+x(5-12x)$

m) $5x(x-2)+2x(3-x)$

n) $6x(x+8)+x(1-6x)$

Areas

Find the area in each diagram



Negative Numbers

Simplify the following:

a) $-6 - (-6)$ b) $-2 - 9$ c) $-4 - (-8)$ d) $10 + (-3)$

e) $-2 - (-5)$ f) $-6 - (-8)$ g) $0 - (-9)$ h) $8 - 13$

i) $-3 + (-9)$ j) $12 - (-7)$ k) $-13 - (-15)$ l) $-9 - (-5)$

m) $-1 + (-8)$ n) $-8 + (-3)$ o) $2 - (-1)$ p) $8 - (-5)$

q) $14 + (-9)$ r) $7 + (-5)$ s) $-12 + (-2)$ t) $-6 + (-5)$

u) $13 - (-9)$ v) $10 - (-2)$ w) $12 + (-3)$ x) $9 + (-4)$

Proportion

- 1) If 32 rulers cost £3.52 what would 25 rulers cost ?
- 2) 32 boxes of crayons cost £47.36. What would 48 boxes cost ?
- 3) 25 bottles of wine cost £ 143.75. What would 15 bottles cost ?
- 4) If 40 set squares cost £7.60 , what would 64 cost ?
- 5) 19 metres of curtain material cost £ 149.15. What would 12 metres cost ?
- 6) A set of 8 dental mirrors cost £ 110. What would a set of 12 cost ?
- 7) A store buys 140 childrens shirts from their supplier for £539. The store wish to buy in a further 360 of the same shirts. How much would they pay for them ?
- 8) A jeweller buys 50 bangles for his shop for £ 997.50. As they sell so well, he decides to buy a further 40 bangles. How much will these cost ?
- 9) If 56 calendars cost £277.20, how much would 44 cost ?
- 10) If 12 painters can paint a bridge in 32 days, how long will it take 9 painters to paint the bridge ?
- 11) If two car mechanics can strip a car engine and reassemble it in 5 hours , how long should it take 3 mechanics to do the same job ?
- 12) A field will feed 320 sheep for a period of 20 days. How long would the food last if there were only 180 sheep present in the field ?
- 13) If 27 men take 16 days to build a wall, how long would it have taken 12 men to build the same wall ?
- 14) If 4 plumbers can do the full plumbing for a house in 8 days how long would it take 5 plumbers to do the same work ?
- 15) If 4 men have enough food to last them for 24 days, how long would the same amount of food last 6 men ?



Significant Figures

Mathematics



Department

- Round these numbers to one significant figure
a 4660 b 2989 c 3409
d 1127 e 39890 f 22949
- Round these numbers two significant figures.
a 6457 b 3507 c 6388
d 5109 e 249 f 76456
- Round these numbers to three significant figure.
a 16.335 b 177651 c 23592
d 512.52 e 1.9518 f 12.2848
- Round these numbers to two significant figures.
a 0.067398 b 0.1245 c 0.000454
d 0.004983 e 0.01093 f 0.0003681
- The diagonals of a rhombus are 132cm and 154cm. Calculate the area of the rhombus and round your answer to 2 significant figures.
- The radius of a circle is 12.7cm. Calculate the area of the circle and round your answer to 1 significant figure.
- Paul bought a house for £340,000 and sold it 5 years later for £125,750. Calculate Paul's percentage loss. Round your answer to 1 significant figure.



