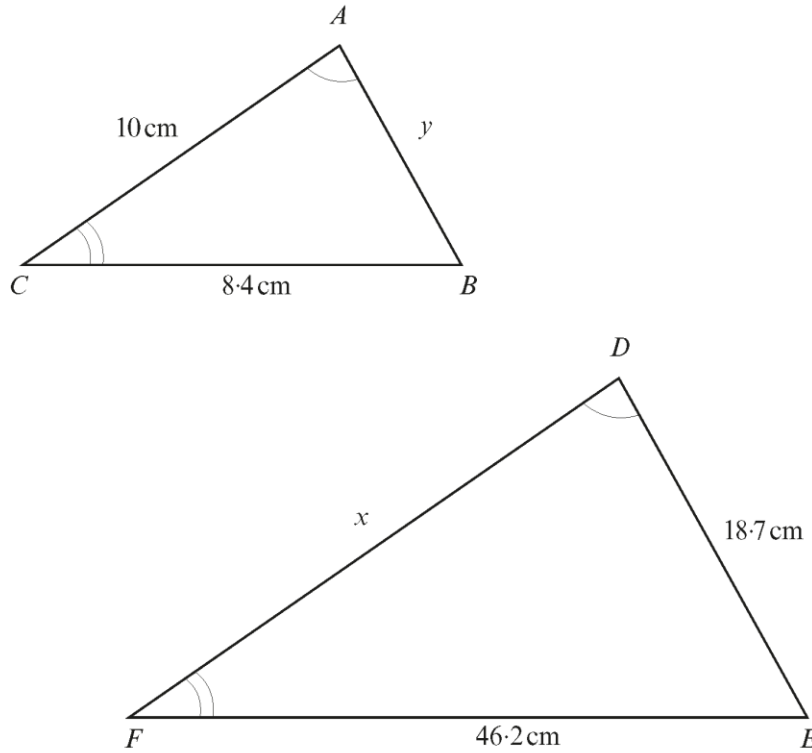


Siapiau Cyflun

1.

Mae'r triongl ABC yn gyflun â'r triongl DEF .



Nid yw'r diagram wedi'i luniadu wrth raddfa

Cyfrifwch hydoedd x ac y .

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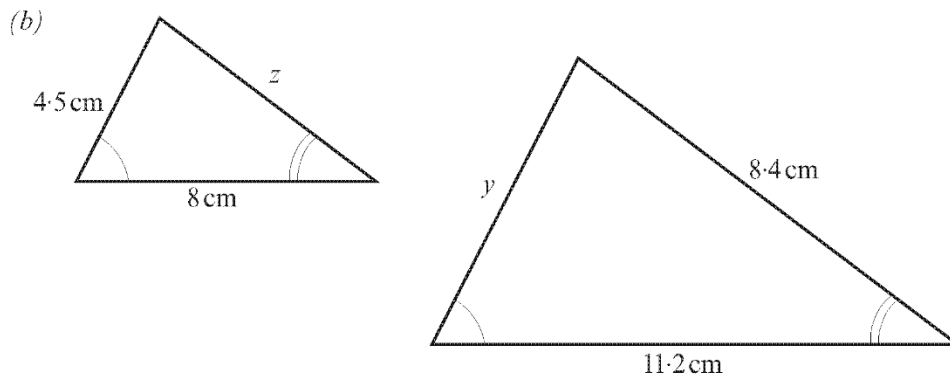
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[4]

2.



Nid yw'r diagram wedi'i luniadu wrth raddfa

Cyfrifwch hydoedd ochrau y a z .

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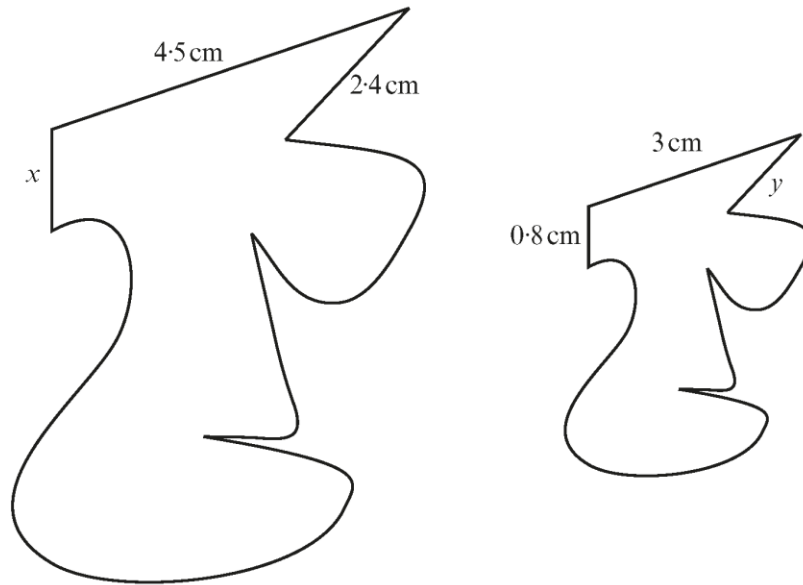
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$y =$ cm $z =$ cm

[4]

4.

Mae cwmni Dewi yn cynllunio logo newydd.
Mae'r diagram yn dangos dau fersiwn cyflun (*similar*) o'r logo arfaethedig (*planned*).



Nid yw'r diagram wedi'i luniadu wrth raddfa

(a) Cyfrifwch hydoedd ochrau x ac y .

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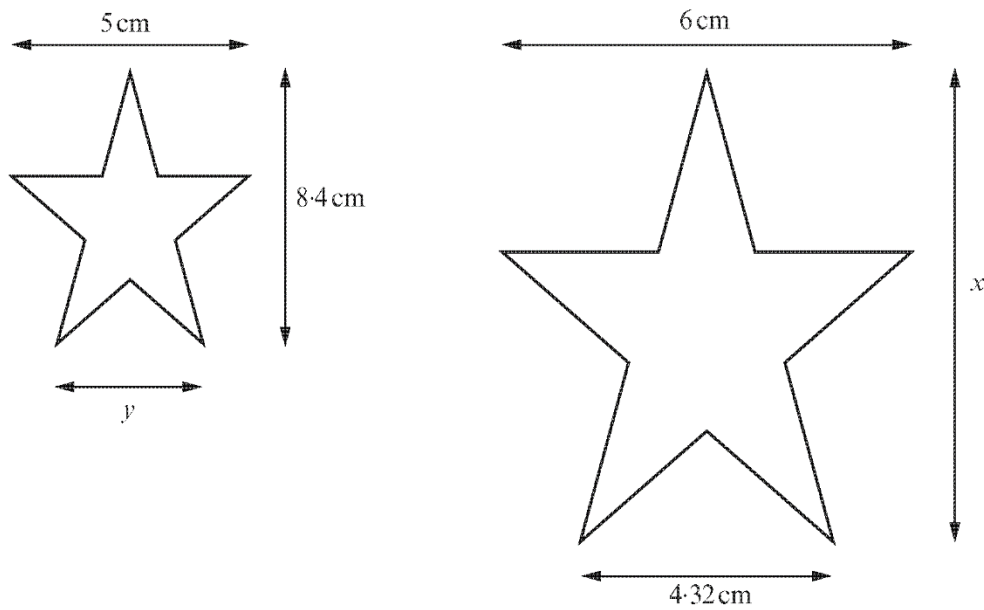
$x = \dots\dots\dots$ cm

$y = \dots\dots\dots$ cm

[4]

6.

Mae'r sêr sy'n cael eu dangos isod yn gyflun (*similar*).



Nid yw'r diagram wedi'i luniadu wrth raddfa

Gan ddangos eich holl waith cyfrifo, darganfyddwch hydoedd x ac y .

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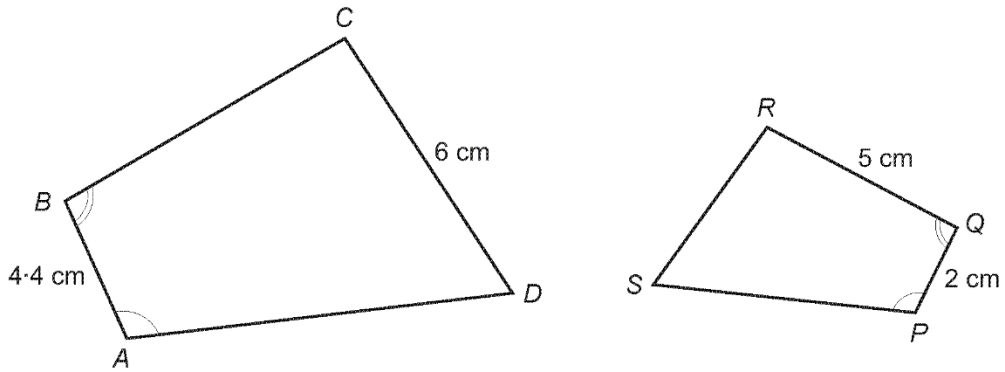
$x = \dots\dots\dots$ cm

$y = \dots\dots\dots$ cm

[4]

7.

Mae'r diagram yn dangos dau bedrochr cyflun (*similar*), $ABCD$ a $PQRS$.



Nid yw'r diagramau wedi'u lluniadu wrth raddfa

(a) Cyfrifwch yr hyd BC . [2]

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(b) Cyfrifwch yr hyd RS . [2]

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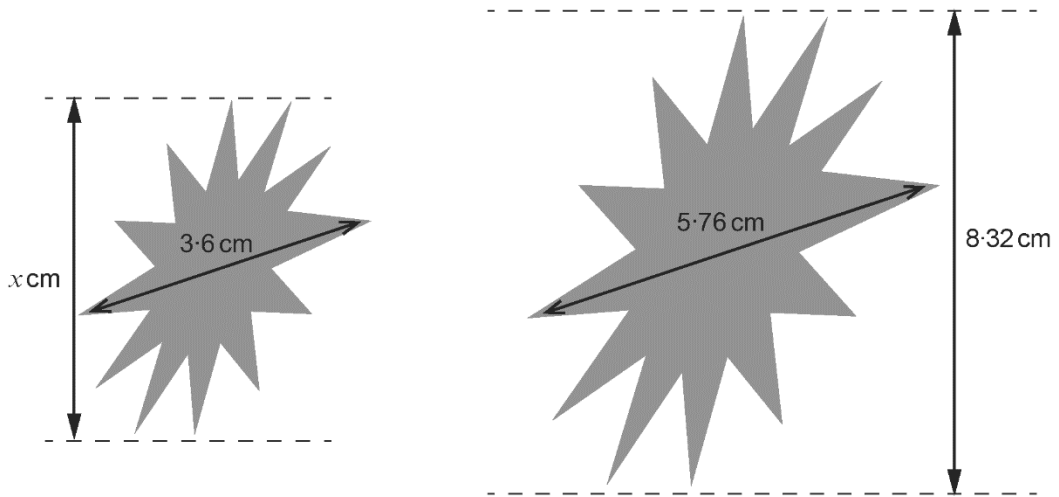
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8.



Nid yw'r diagram wedi'i luniadu wrth raddfa

Mae'r diagram uchod yn dangos dau siâp cyflun (*similar*).

- (a) Cyfrifwch yr hyd x . [2]

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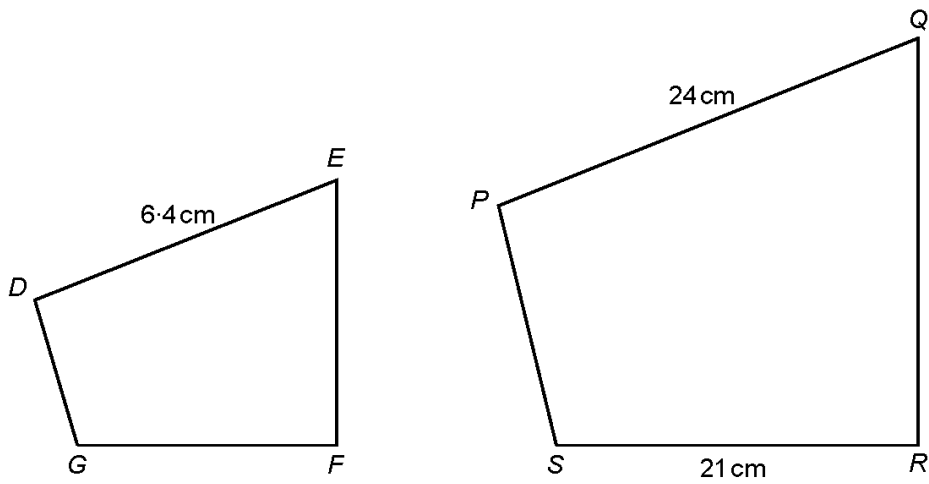
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9.

Mae'r pedrochrau $DEFG$ a $PQRS$ yn gyflun (*similar*).



Nid yw'r diagramau wedi'u lluniadu wrth raddfa

(a) Cyfrifwch yr hyd GF . [2]

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(b) Arwynebedd $DEFG$ yw 38 cm^2 . Cyfrifwch arwynebedd $PQRS$. [3]

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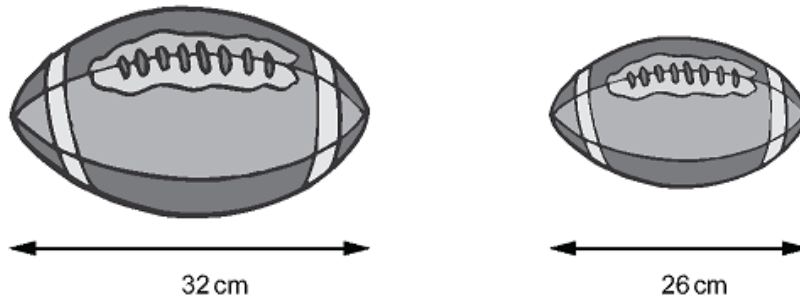
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11.

Mae 2 bêl rygbi gyflun (*similar*) yn cael eu dangos isod.



Nid yw'r diagram wedi'i luniadu wrth raddfa

Cyfaint y bêl rygbi fwyaf yw 500 cm^3 .
Cyfrifwch gyfaint y bêl rygbi leiaf.

[3]

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12.

Arwynebeddau dau siâp cyflun (*similar*) yw 700 cm^2 a 140 cm^2 .
Perimedr y siâp lleiaf yw 83 cm .
Cyfrifwch beth yw perimedr y siâp mwyaf.

[3]

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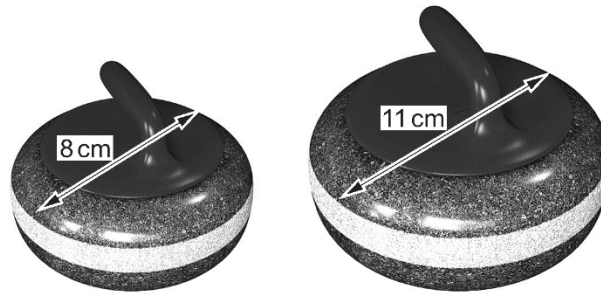
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13.

Mae dau faen cwrlo (*curling stones*) **cyflun** (*similar*) ar gyfer plant i'w gweld isod.



Nid yw'r diagram wedi'i luniadu wrth raddfa

Cyfaint y maen cwrlo lleiaf yw 966 cm^3 .
Cyfrifwch gyfaint y maen cwrlo **mwyaf**.

[3]

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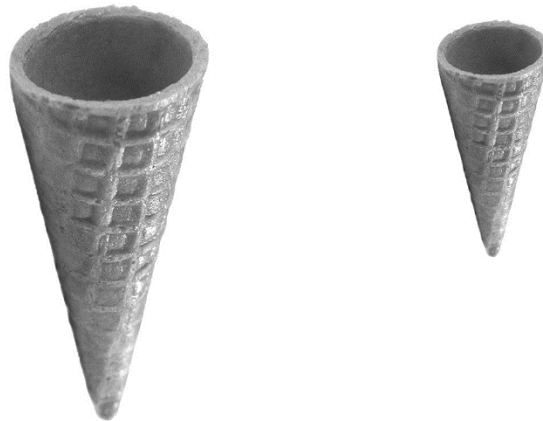
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Cyfaint y maen cwrlo **mwyaf** yw cm^3

15.

Mae'r diagram yn dangos 2 gôn hufen ia cyflun (*similar*).



Nid yw'r diagram wedi'i luniadu wrth raddfa

Arwynebedd pen crwn y côn mwyaf yw 22.7 cm^2 .
Cyfaint y côn mwyaf yw 84.6 cm^3 .
Arwynebedd pen crwn y côn lleiaf yw 15.2 cm^2 .

Cyfrifwch beth yw cyfaint y côn lleiaf.

[5]

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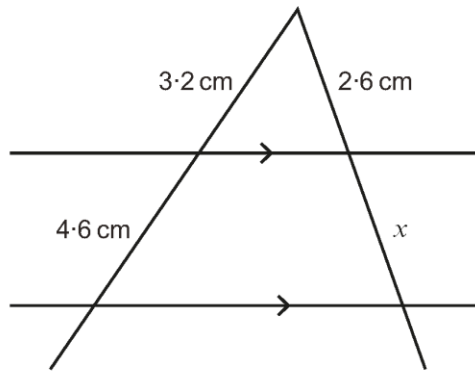
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17.



Nid yw'r diagram wedi'i luniadu wrth raddfa

Cyfrifwch yr hyd x .
Rhaid i chi ddangos eich holl waith cyfrifo.

[3]

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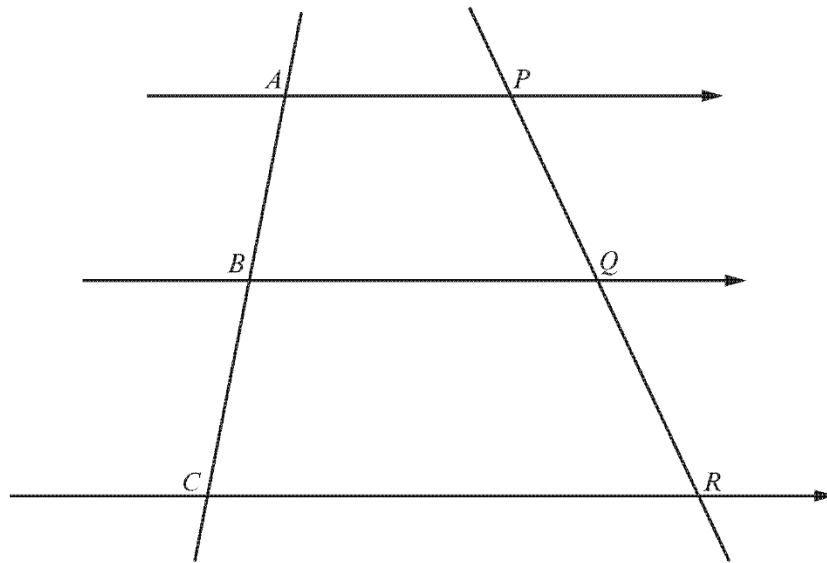
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$x =$ cm

18.

(a)



Nid yw'r diagram wedi'i luniadu wrth raddfa

Rydych chi'n cael gwybod bod $AB = 3$ cm, $BC = 5$ cm a $PQ = 4.5$ cm.
Cyfrifwch hyd PR .

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[3]

Cynllun Marcio

1.

10. $(x =) (46.2/8.4) \times 10$ (OR 5.5×10) (=) 55(cm)	M1 A1	Or alternative full method to find x, x not implicit
$(y =) 18.7 \div (46.2/8.4)$ (OR $18.7/5.5$) (=) 3.4(cm)	M1 A1	Or alternative full method to find y, y not implicit
		Alternatively candidates may refer to scale factor 5.5 throughout

2.

(b) $y/4.5 = 11.2/8$ $y = 6.3$ (cm)	M1 A1	Scale factor $11.2/8 (=1.4)$ used appropriately
$z/8.4 = 8/11.2$ $z = 6$ (cm)	M1 A1 7	Scale factor $11.2/8 (=1.4)$ used appropriately

3.

Methods in Mathematics June 2015 Unit 2 Higher Tier	Mark	Comment
11. $(x =) 4.48 \div 0.84/0.6$ (= $4.48 \div 1.4$) = 3.2 (cm)	M1 A1	Or calculation that could lead to correct answer Accept answers rounding to 3.2 (but not from inappropriate working)
$(y =) 2.8 \times 0.84/0.6$ or $(y =) 2.8 \times 1.4$ = 3.92(cm)	M1 A1 4	Or calculation that could lead to correct answer Accept answers that round to 3.9(cm) (but not from inappropriate working)

4.

13(a) $x/0.8 = 4.5/3$ OR $x = (4.5/3) \times 0.8$ OR $x = 1.5 \times 0.8$ $x = 1.2$ (cm)	M1 A1	Or equivalent
$y = (3/4.5) \times 2.4$ OR $y = 2.4/1.5$ OR $y = 2.4 \times 0.8/x$ $y = 1.6$ (cm)	M1 A1	Or equivalent FT their x

5.

2015 Summer Linear Paper 2 Higher Tier		Comments
7. $3.5/4.2 = x/3.36$ or equivalent correct statement $x = 2.8$ (cm)	M1 A1	OR appropriate use of scale factor $(\times)0.8$ (or $(\div)1.25$) Do not accept errors from premature approximation
$y/4.2 = 3.04/3.36$ or equivalent correct statement $y = 3.8$ (cm)	M1 A1	OR appropriate use of scale factor $(\div)0.8$ (or $(\times)1.25$) Do not accept errors from premature approximation <i>Accept unlabelled answers if given unambiguously</i>

6.

9. $(x =) 8.4 \times 6/5$ = 10(.08 cm) or 10.1(cm)	M1 A1	Or equivalent calculation that could lead to correct answer
$(y =) 4.32 / 6/5$ or $(y =) 4.32 \times 5/6$ = 3.6 (cm)	M1 A1 4	Or equivalent calculation that could lead to correct answer

7.

Ribbon marked. To be viewed with diagram.		
(a) $5 \times (4.4 \div 2)$ or $5 \div (2 \div 4.4)$ or equivalent = 11 (cm)	M1 A1	
(b) $6 \div (4.4 \div 2)$ or $6 \times (2 \div 4.4)$ or equivalent = 2.7(2727....) (cm)	M1 A1	FT their scale factor from (a).

8.

13.(a) $x/8.32 = 3.6/5.76$ or equivalent or sight of scale factor 1.6 or 0.625 if used appropriately (x =) 5.2 (cm)	M1	
	A1	

9.

Unitised Unit 3 – Nov 2015 Higher Tier		FINAL MARK SCHEME Comments
14. (a) $21 \div (24 \div 6.4)$ or $21 \times (6.4 \div 24)$ = 5.6 (cm) (b) Sight of an area scale factor of 14.0625 OR 0.0711 (Area PQRS =) 38×14.0625 OR $38 \div 0.0711$ or equivalent (Area PQRS =) 534(.375) (cm ²)	M1 A1 B1 M1 A1 5	FT their $(24 \div 6.4)$ or $(6.4 \div 24)$ from (a).

10.

(a) (x =) $4.48 \div 6.72/4.8$ or $4.48 \div 1.4$ or $4.48 \times 0.7142857\dots$ or $4.48 \times 5 \div 7$ (x cm =) 3.2 (cm)	M1 A1	Do not accept from premature approximation, the value should actually work out to be 3.2 cm exactly
(b) $(7 \div 5)^2 \times 10.4$ or equivalent 20.38(4...cm ²) or 20.4(cm ²)	M1 A1	FT 'their scale factor' from (a) ISW. Do not accept 20.3(cm ²) (unless 20.38... seen) Only accept 20 (cm ²) from correct working shown
	4	

11.

Linear GCSE Mathematics Higher Tier November 2015 Paper 2		FINAL MARK SCHEME Comments
15. Seen or implied: linear scale factor $32/26 (=1.23\dots)$ or $26/32 (=0.8125)$ OR volume scale factor $(32/26)^3 (=1.8643\dots)$ or $(26/32)^3 (=0.5363\dots)$ Smaller volume $(26/32)^3 \times 500$ OR $500 \div (32/26)^3$ 268(.188.. cm ³)	S1 M1 A1	Accept sight of $(500 \times 32/26 =) 615(.38\dots)$ or $(500 \times 26/32 =) 406(.25)$ as evidence of linear scale factor Accept rounded or truncated <i>Penalise premature approximation of the scale factor, e.g. linear $(32/26 =) 1.2$, leading to $(1.2)^3$ becoming $1.7(\dots)$, by awarding A0, but allowing S1 and possible M1</i>
	3	

12.

Ffactor graddfa llinol $= \sqrt{\frac{700}{140}} (= \sqrt{5})$ NEU $\sqrt{\frac{140}{700}} (= \frac{\sqrt{5}}{5})$ $83 \times \sqrt{5}$ NEU $83 \div \frac{\sqrt{5}}{5}$ $= 185(.59\dots \text{cm})$ neu $83\sqrt{5}$		B1 M1 A1	Neu gywerth. Dilyn trwodd eu ffactor graddfa llinol.
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13.

Sight of $(11/8)^3$ or $(8/11)^3$ or $(1.375)^3$ or $(0.7272\dots)^3$ $(11/8)^3 \times 966$ or $966 \div (8/11)^3$ or equivalent 2511(.2....cm ³)	M1 m1 A1	(2.5996.... or 0.38467...) CAO. Do not accept from premature approximation of the scale factor
	3	

14.

15. Volume scale factor $\times 27$	B1	Allow for sight of $54/2$ or 27 provided not connected to irrelevant working
Length scale factor $\times 3$	B1	Accept $\sqrt[3]{27}$. Allow for sight of 3 provided not connected to irrelevant working
Number of larger pebbles needed ($15/3 =$) 5	B1	Award of the 2 nd B1 implies also the 1 st B1 <i>SC2 only for an answer of 5 without relevant working</i>

15.

Area scale factor $15.2 \div 22.7 (=0.6696\dots)$ or equivalent	B1	Accept inverse
Linear scale factor $\sqrt{(15.2/22.7)} (=0.81829\dots)$ or equivalent	B1	Accept inverse
Volume scale factor $\sqrt[3]{(15.2/22.7)^3} (=0.54793\dots)$ or equivalent	B1	Accept inverse
Volume of smaller cone $84.6 \times \sqrt[3]{(15.2/22.7)^3}$ or equivalent	M1	
$46.3(550\dots \text{cm}^3)$	A1	CAO. Not from premature approximation
	5	<i>Alternative:</i> <i>Larger cone base radius</i> $= \sqrt{(22.7/\pi)} (= 2.6880\dots)$ B1 <i>Larger cone height</i> $= 84.6 \times 3 / 22.7 (= 11.1806\dots)$ B1 <i>Smaller cone base radius</i> $= \sqrt{(15.2/\pi)} (= 2.1996\dots)$ B1 <i>Smaller cone height</i> $= (2.1996\dots / 2.6880\dots) \times 11.1806$ $= 0.8182\dots \times 11.1806 = 9.1(490\dots)$ B1 <i>Volume of smaller cone</i> $= 1/3 \times \pi \times 2.1996^2 \times 9.1490$ $= 46.3(550\dots \text{cm}^3)$ B1

16.

Darganfod bod y ffactor graddfa'n 1.5	M1
$12.126 \text{ cm} \div 1.5$	M1
$= 8.08 \text{ cm}$ i 2 le degol	A1

17.

$x = 2.6 \times 4.6 \div 3.2$	M2	M1 for $3.2/4.6 = 2.6/x$ or equivalent <i>Award M2, A0 for an answer of 3.8(3... cm) from</i> $4.6 \div 1.2$
$3.7(375 \text{ cm})$	A1	Accept 4(cm) from appropriate working. No marks for unsupported 4(cm)
	3	

18.

12.(a) 3:5 and 4.5:QR or equivalent, or scale factor 1.5	M1	OR 3:8 and 4.5:PR or equivalent
QR = 1.5×5 or equivalent	A1	OR PR = $4.5 \times 8 \div 3$ or equivalent
PR = 12 (cm)	A1	