

# Svör

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## Svör við verkefnum

### Verkefni 1

- 14
- 11
- $4\frac{1}{2}$
- $-1\frac{1}{2}$
- 7
- $4\frac{1}{2}$
- 5
- 163
- 4
- $-4\frac{1}{2}$
- 63
- 207
- 28
- 80
- 1
- 62
- 7
- 4
- 10
- $\frac{1}{4}$
- 37
- 30
- $4\frac{1}{3}$
- $\frac{11}{12}$
- $-1\frac{2}{7}$
- $-2\frac{7}{9}$
- $-3\frac{5}{9}$
- $a$
- $2a - b$
- 2
- $b$
- 0
- $x^2 - 2x$
- $a^2 - 2a$
- $a^2b - 2ab$
- $a^2b^2 - 2ab$
- $ax - ay + bx - by$
- $x^2 + 4x + 3$
- $a^2 - 5a + 6$
- $a^2b - 2ab - 3a + 6$
- $4b - 4a$
- $6b^2x - 6a^2x$
- $5(a + 2b)$
- $a(x + 2y)$
- $(a + 1)(x + y)$
- $2ax$
- $x(a + b - c)$
- $(x - y)^2$
- $x(x + 2)$
- $(a + b)(m + 1)$
- $(x - y)(a - 1)$
- $(x + 4)(x + 3)$
- $(x + 5)(x - 3)$
- $(x - 4)(x + 1)$
- $(x - 25)(x + 4)$
- $(x + 7)(x + 3)$
- $(x + 7)(x + 5)$
- $(x - 7)(x - 5)$
- $(x + 7)(x - 5)$
- $(x - 7)(x + 5)$
- $5(x + 7)(x + 5)$
- $10(x - 7)(x - 5)$
- $(x + 6)(x - 4)$
- $(x - 6)(x + 4)$
- $(x + 6)(x + 9)$
- $(x - 6)(x - 9)$
- $(x - 1)^2(x + 1)$
- $(2x - y)(2x - 3z)$
- $\frac{1}{16}$
- 1
- $a^2$
- 11
- 3
- 2
- 1
- $a^{10}$
- 16
- 3
- 1
- $8x^6y^9$
- 216
- 243
- 64
- 64
- $a^6b^4$
- $125a^9b^{-6}$
- 52
- $4x^{11}$
- $\frac{1}{a}$
- $a^{-4}b^4$
- $\frac{729y^6}{4096}$
- $18ab^2$

## 2 Svör við verkefnum

93. 32  
94.  $125a^{15}b^{-2}$   
95. 4  
96. 8  
97. 9  
98. 32  
99.  $6 \cdot \sqrt{6}$   
100. 2  
101. 7  
102.  $a^3$   
103.  $a^3b \cdot \sqrt{b}$   
104.  $12 \cdot \sqrt{2}$   
105.  $88 \cdot \sqrt{2}$   
106.  $4 \cdot \sqrt{6}$   
107.  $1.2 \cdot \sqrt{2}$   
108.  $6 \cdot \sqrt{2}$   
109. 6  
110.  $a^3 \cdot \sqrt{a}$   
111. -1  
112. 1  
113. a  
114.  $x = 6$   
115.  $x = 6$   
116.  $x = -1\frac{1}{3}$   
117.  $x = 1$   
118.  $x = 2$   
119.  $x = -1$   
120.  $x = 4$   
121.  $x = -9$   
122.  $x = 2\frac{2}{3}$   
123.  $x = 3\frac{3}{10}$   
124.  $x = 4$   
125.  $x = \frac{5}{7}$   
126.  $x = -4$   
127.  $x = 1$   
128.  $x = -1\frac{1}{3}$   
129.  $x = 1$   
130.  $x = 5$   
131.  $x = 8$   
132.  $x = 8$   
133.  $x = -\frac{1}{5}$   
134.  $x = 2, y = 5$   
135.  $x = -1, y = -10$   
136.  $x = 2\frac{2}{5}, y = \frac{4}{5}$   
137.  $x = 4, y = 7$   
138.  $x = 2, y = 3$   
139.  $x = 8, y = 15$   
140.  $x = 4, y = 5$   
141. 3  
142. 10  
143. 3270  
144. 26 og 14  
145. 45 stelpur, 40 strákar  
146. 120 l mjólk  
20 l súrmjólk  
147. 62  
148. 200 km  
149. 480 km  
150. Guðmundur 10 ára  
Gunnar 50 ára  
151. Ari 32 ára  
Einar 16 ára  
152. Hans 38 ára  
Jón 14 ára  
153. Friðrik 48 ára  
Guðni 8 ára  
154. a) 600 km  
b) 60 km/klst  
c) 10 klst
- ### Verkefni 2
1. a) 120, b) 750,  
c) 12000, d) 700  
2. a) 750, b) 120,  
c) 7.5, d)  $128\frac{4}{7}$   
3. a) 100, 300  
b) 300, 100  
c) 150, 250  
d) 250, 150  
e) 192, 208  
f) 131.25, 268.75  
4. 39 ára  
5. a) 200, 400 og 600  
b) 400, 200 og 600  
c) 240, 360 og 600  
d) 600, 100 og 500  
6. a) 300, 600, 900, 1200 og  
1500  
b) 300, 450, 1500, 600 og  
1650  
7. a) 185.90 \$, b) 50700 kr  
c) 369.90 mörk  
d) 25480 kr  
e) 47.76 mörk,  
f) 120.62 \$  
8. a) 27.7778 m/s  
b) 62.1504 mílur/klst  
c) 1.03584 mílur/mín  
9. a) 157.48 tommur  
b) 88.9 cm  
10. a) 53.9957 sjómílur  
b) 55.56 km  
11. a) 352, b) 100.8  
12. 29.1667%  
13. 342.857%  
14. 39.4737%  
15. 38.8889%  
16.  $b = 209.677$   
17. a) 91.76 kr, b) 67.83 kr,  
c) 80.32 kr, d) 80.32 kr,  
e) 86.43 kr, f) 80.58 kr  
18. 42.8571%  
19. 48.0244%  
20. 3.70370%  
21. 60 g  
22. 4.90702%  
23. a) 262.50 kr  
b) 0.47619 ár = 174 daga  
c) 42857.14 kr  
24. a) 266.67 kr  
b) 10 mánuði  
c) 37500 kr  
25. a) 797.38 kr  
b) 1118.37 kr  
c) 23488.48 kr  
d) 28585879.37 kr  
26. a) 19.16 kr, b) 73.91 kr,

- c) 13992265.37 kr  
 d)  $2.87988 \cdot 10^{19}$  kr  
 27. a) 7.24 kr, b) 52.35 kr,  
 c) 19541.97 kr  
 d)  $7.16662 \cdot 10^6$  kr  
 e)  $3.63615 \cdot 10^8$  kr  
 f)  $9.46240 \cdot 10^{41}$  kr  
 28. 6744.25 kr  
 29. 7447.33 kr  
 30. 6386.39 kr

### Verkefni 3

- Svari sleppti.
- a)  $x = 22.5^\circ$   
b)  $x = 22.5^\circ$
- a)  $x = y = 45^\circ$   
b)  $x = y = 90^\circ$
- a)  $150^\circ$  b)  $95^\circ$   
c)  $67.5^\circ$
- 18 mín. yfir 4
- $A = 26^\circ$ ,  $B = 52^\circ$   
 $C = 102^\circ$
- $x = 96^\circ$ ,  $y = 116^\circ$   
 $z = 64^\circ$
- $x = 70^\circ$
- $x = y = 40^\circ$
- $A = 80^\circ$ ,  $B = 60^\circ$   
 $C = 40^\circ$
- $n = 6$
- a) Summa grannhornanna er  $360^\circ$ .  
b) Hornasumman er  $8 \cdot 180^\circ - 360^\circ$   
c)  $100 \cdot 180^\circ - 360^\circ$   
d)  $n \cdot 180^\circ - 360^\circ$

### Verkefni 4

- $A = 13^\circ$ ,  $B = 77^\circ$
- $x = 130^\circ$ ,  $y = 130^\circ$   
 $z = 130^\circ$ ,  $u = 40^\circ$

- $x = 60^\circ$ ,  $y = 80^\circ$   
 $z = 50^\circ$
- $x = 125^\circ$ ,  $B = 30^\circ$   
 $y = 25^\circ$
- $x = 20^\circ$ ,  $y = 70^\circ$
- $x = 150^\circ$ ,  $y = 50^\circ$
- $x = 70^\circ$ ,  $y = 40^\circ$
- a)  $\alpha = 2\sqrt{5}$   
 $\beta = \frac{8}{15} \cdot \sqrt{5}$   
 $c = \frac{18}{5} \cdot \sqrt{5}$   
 $B = 41.8103^\circ$   
 $A = 48.1897^\circ$   
 $n_c = 3.6$   
 $v_B = 6.42279$
- a)  $a = 6$ ,  $c = 2\sqrt{13}$   
 $h = \frac{12}{13} \cdot \sqrt{13}$   
 $\beta = \frac{8}{13} \cdot \sqrt{13}$   
 $A = 66.0375^\circ$   
 $v_B = 6.73634$   
 $n_c = \frac{2}{3} \cdot \sqrt{13}$
- a)  $a = 8.64454$   
 $B = 52.8962^\circ$   
 $h_c = 6.89440$   
 $m_c = 6.90029$   
 $v_B = 6.89660$
- a)  $a = 8.33757$   
 $c = 12.8447$   
 $n_a = 6.67145$   
 $h_c = 7.7066$   
 $m_b = 9.32741$   
 $v_C = 7.15880$
- a)  $G_A = B + C$   
 $G_B = A + C$   
 $G_C = A + B$

- b)  $A_1 = \frac{B+C}{2}$

$$B_1 = \frac{A+C}{2}$$

$$C_1 = \frac{A+B}{2}$$

- c)  $A_1 = 75^\circ$ ,  $B_1 = 55^\circ$   
 $C_1 = 50^\circ$
- $\angle CDA = 22^\circ$   
 $\angle DCA = 112^\circ$
- t.d.  $\angle (v_B, h_a) = 65^\circ$
- Svari sleppt.
- $h = 9.6$ ,  $\alpha = 12.8$ ,  
 $\beta = 7.2$
- $AC = 13\sqrt{2}$   
 $BE = \frac{13}{2} \cdot \sqrt{3}$   
 $AD = \frac{26}{3} \cdot \sqrt{3}$   
 $CD = \frac{39-13\sqrt{3}}{3}$
- $AE = \frac{5}{2}$ ,  $AF = \frac{25}{6}$   
 $EB = \frac{9}{5}$ ,  $GD = \frac{36}{5}$
- a)  $c = 5.0567$   
 $A = 24.54^\circ$   
 $B = 65.46^\circ$   
b)  $a = 48.3735$   
 $A = 56.51^\circ$   
 $B = 33.49^\circ$   
c)  $b = 14.4816$   
 $c = 16.4014$   
 $B = 62^\circ$   
d)  $a = 49.10$   
 $A = 70.74^\circ$   
 $B = 19.26^\circ$   
e)  $b = 1.041$   
 $c = 1.766$   
 $A = 53.86^\circ$   
f)  $a = 28.50$   
 $b = 97.65$   
 $A = 16.27^\circ$
- a)  $c = 11.1355$   
 $A = 68.9483^\circ$   
 $B = 51.0517^\circ$   
b)  $a = 18.4717$

#### 4 Svör við verkefnum

- $b = 14.6493$   
 $c = 15.6649$   
 18. a)  $38.6380^\circ$   
 b)  $r = 11.4042 \text{ m}$   
 19. Svári sleppt.

#### Verkefni 5

- $U = 70.7107$   
 $F = 312.5$
- $\frac{9}{4}$
- a) 20.7846  
b) 10, 13  
c) 866.206  
d) 300
- $AC = 15.5572$   
 $BD = 10.1543$
- a) 31.4195  
b) 7.01537
- $\frac{10}{7}$
- $3(7 - 4\sqrt{3})$
- $\frac{3}{2}$
- $b^2(2\sqrt{3} - 3)$
- 75
- $AB = \frac{10}{3} \cdot \sqrt{3}$   
 $CD = 5\sqrt{2}$ ,  $BD = \sqrt{106}$
- a)  $F = 156$   
 $U = 26 + 2\sqrt{151}$   
b)  $a = 84$   
 $U = 100 + 2\sqrt{1189}$   
c)  $U = 60 + 2\sqrt{325}$
- a) 6.0470  
b) 13.5879
- 0.7048
- a)  $108^\circ$   
b) 180.264  
c) 36.3271
- $\frac{32}{3} \cdot \pi - 16\sqrt{3}$
- $\angle PBD = 41^\circ$   
 $\angle PDB = 37^\circ$

- $\widehat{AD} = 100^\circ$   
 $\angle AQB = 95^\circ$   
 $\angle CAD = 30^\circ$
- $\angle BCD = 60^\circ$
- $\angle ABC = 47^\circ$
- a)  $\widehat{EA} = 50^\circ$   
 $\widehat{CB} = 20^\circ$   
b)  $x = 25^\circ$ ,  $y = 15^\circ$   
 $z = 65^\circ$ ,  $v = 80^\circ$   
c)  $F = 3.98861$
- a)  $x = 40^\circ$ ,  $y = 20^\circ$   
b)  $\widehat{EF} = 30^\circ$ ,  $\widehat{DE} = 10^\circ$   
og  $\widehat{CD} = 70^\circ$   
c)  $F = 7.04840$
- a)  $x = 15^\circ$ ,  $z = 60^\circ$   
b)  $\widehat{AB} = 150^\circ$ ,  
 $\widehat{CD} = 30^\circ$  og  $\widehat{AD} = 110^\circ$
- a)  $x = 70^\circ$ ,  $y = 20^\circ$   
b)  $\widehat{BC} = 80^\circ$ ,  
 $\widehat{CD} = 140^\circ$
- $\widehat{BC} = 120^\circ$ ,  $\widehat{DA} = 100^\circ$   
 $r = 60^\circ$ ,  $s = 50^\circ$ ,  
 $t = 40^\circ$   
 $u = 20^\circ$ ,  $v = 60^\circ$ ,  
 $x = 70^\circ$ ,  $y = 100^\circ$ ,  
 $z = 30^\circ$
- $a = 7.07068$   
 $b = 8.66025$   
 $c = 9.65926$
- a)  $B = 32.3884^\circ$   
 $c = 44.4842$   
b)  $B = 40^\circ$   
 $c = 38.3022$   
c) Tveir möguleikar  
1)  $B = 53.4641^\circ$   
 $c = 31.0576$   
2)  $B = 126.5359^\circ$   
 $c = 7.24460$   
d) Engin lausn

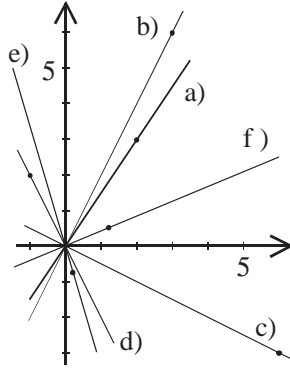
- a)  $B = 37.9886^\circ$   
 $c = 27.1841$   
b)  $B = 55.1522^\circ$   
 $c = 12.8007$   
c) Engin lausn  
d) Engin lausn
- Sönnun, svári sleppt.
- Sönnun, svári sleppt.
- $r = 2.16667$
- 14.25 lítrar
- $h = \frac{4}{\pi}$ ,  $Y = 197.080$
- $V = 1591.50$   
 $h = 7.9155$
- a)  $V = \frac{2}{3} \cdot \sqrt{2}$   
 $Y = 4\sqrt{3}$   
b)  $V = \frac{1}{3} \cdot \sqrt{2}$   
 $Y = 3 + \sqrt{3}$
- a)  $V = 12\sqrt{3}$   
 $Y = 6(\sqrt{3} + \sqrt{7})$   
b)  $V = 12.3607$   
 $Y = 17.9360$
- a)  $V = \frac{125\pi\sqrt{3}}{3} \text{ cm}^3$   
 $Y_b = 50\pi \text{ cm}^2$   
b)  $m = 13.5\pi \text{ g}$
- a)  $19.23 \text{ m}^3$   
b)  $79.17 \text{ m}^3$
- a)  $V = \frac{112}{3} \cdot \pi$   
b)  $V = \frac{128}{3} \cdot \pi$   
c)  $V = \frac{736\sqrt{2}}{3} \cdot \pi$
- a)  $V = 12\pi$   
b)  $V = 16\pi$   
c)  $V = \frac{48}{5} \cdot \pi$   
d)  $V = 48\pi$   
e)  $V = \frac{343}{4} \cdot \pi$   
f)  $V = \frac{1308}{25} \cdot \pi$
- 28.125% ( $\frac{9}{32}$ )

42. 44.44% ( $\frac{4}{9}$ )  
 43.  $r = \sqrt{3}$ , 36.76%,  
 63.66%, ( $\frac{2}{\pi}$ )  
 44. a) Útveggur 456.18 m<sup>2</sup>  
 Þak 230 m<sup>2</sup>  
 b) 1843.85 m<sup>3</sup>  
 c) 31.175°  
 45. Sönnun, svari sleppt.  
 46.  $4(4 - \pi) \text{ m}^2$   
 47. a)  $288\pi \text{ cm}^3$   
 b)  $\frac{288\pi}{3} \text{ cm}^3$   
 c)  $\frac{576\pi}{3} \text{ cm}^3$   
 48.  $50\pi \text{ cm}^2$   
 49. a)  $150000\pi$  lítrar  
 b)  $6\pi$  lítrar  
 50.  $125 \text{ cm}^3$   
 51.  $8910\pi \text{ cm}^3$

### Verkefni 6

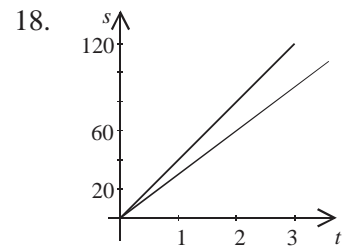
1. a) 11 b) -5 c) 5  
 d) -5 e) -18 f) -19  
 g) 1  
 2. a) 11 b) 11 c) -10  
 d) 9 e) 13.5 f) -9.5  
 g)  $\frac{1}{60}$   
 3. a) 7 b) 22 c) 8  
 d) 31 e) 10 f)  $\frac{1}{8}$   
 g)  $1\frac{5}{7}$   
 5. a) (2,0), b) (2,3),  
 c) (3,1), d) (3,7),  
 e) (1,6), f)  $(1\frac{1}{6}, \frac{1}{2})$ ,  
 g) (2.3, 3.2)  
 6. a) (8,6), b) (6,-3),

- c) (7,9), d) (-4,-6),  
 e) (7.2, 5.5), f) (1,-5)  
 7. a) 5 b)  $3 \cdot \sqrt{5}$  c) 5  
 d) 5 e) 13 f) 5  
 g)  $\sqrt{73}$   
 8. a)  $y = \frac{3}{2}x$ , b)  $y = 2x$ ,  
 c)  $y = -\frac{1}{2}x$ , d)  $y = -2x$



- e)  $y = -\frac{10}{3}x$ , f)  $y = \frac{5}{12}x$   
 9. a) -4, b) 0, c) -10,  
 d)  $-\frac{1}{6}$   
 10. a)  $y = x + 2$   
 b)  $y = 2x - 1$   
 c)  $y = 2x - 4$   
 d)  $y = x + 1$   
 e)  $y = -x + 2$   
 f)  $y = -2x - 1$   
 g)  $y = -\frac{1}{2}x - 2\frac{1}{2}$   
 h)  $y = -\frac{4}{3}x + 16$   
 i)  $y = \frac{3}{4}x - 9$   
 11. a)  $y = x + 2$   
 b)  $y = 2x - 1$   
 c)  $y = -x + 2$   
 d)  $y = -x + 8$

12. a) 2 og  $(\frac{1}{2}, 0)$   
 b) -1 og (2,0)  
 c) 4 og  $(\frac{1}{2}, 0)$   
 d)  $\frac{1}{2}$  og (2,0)  
 e) -2 og (2,0)  
 f)  $-1\frac{1}{2}$  og (2,0)  
 g)  $-1\frac{1}{3}$  og (-9,0)  
 h)  $1\frac{1}{5}$  og (10,0)  
 13. a) (2,5), b) (-1,-10),  
 c) (1,2), d) (2,3)  
 14. a) -3, b) -7, c) 3,  
 d)  $-1\frac{2}{3}$   
 15.  $q = \pm 4 \cdot \sqrt{2}$   
 16. a) Já, b) Nei  
 17.  $(\frac{9}{14}, -\frac{7}{10})$



19. a)  $1\frac{1}{2}$  m/s, b) 1 m/s  
 20.  $y = 20x + 15000$   
 $y = 50x$ , 500 diskur